

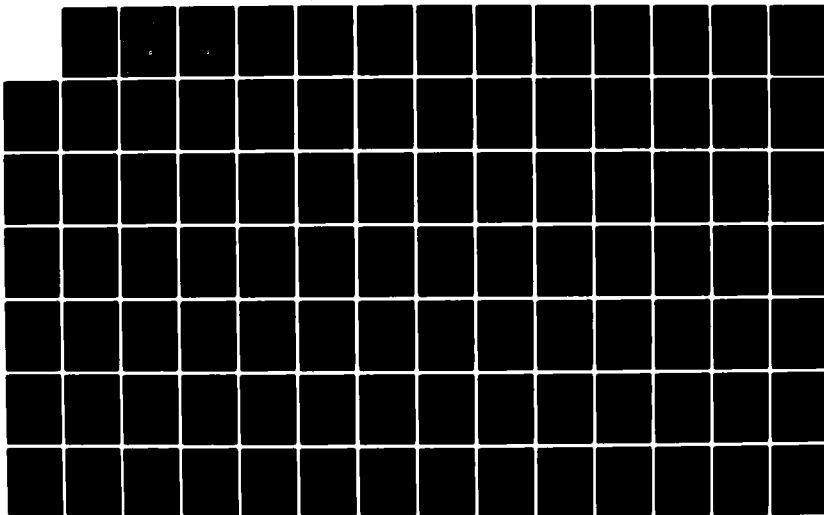
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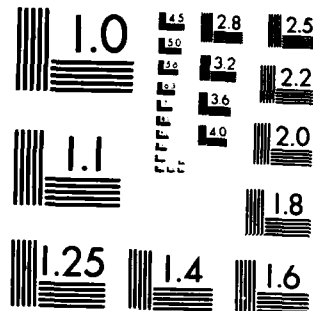
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Concepts Evaluation Model (CEM) Attrition and Calibration Modification I

FINAL REPORT

By:

John E. Shepherd
Tactical Warfare Operations

October 1980

EASTERN TECHNOLOGIES DIVISION

**GENERAL
RESEARCH**



CORPORATION

A SUBSIDIARY OF FLOW GENERAL INC.

7655 Old Springhouse Road, McLean, Virginia 22102

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Submitted To:

Mr. Philip E. Louer
Director, MRCD
US Army Concepts Analysis Agency
Bethesda, Maryland 20014

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FOREWORD

The author is indebted to Mrs. Londin, Dr. Johnsrud, and Maj. Allison of the Concepts Analysis Agency (CAA) for their expert assistance and support with this project. Special recognition goes to Mr. Philip Louer (CAA) for his support and confidence in our efforts.



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1 BACKGROUND

In the fall of 1979 the General Research Corporation (GRC) developed the design specifications¹ to integrate a new combat attrition algorithm into the Concepts Evaluation Model (CEM). It has long been recognized that the use of "firepower potentials," as a basic ingredient of weapon performance in the CEM produced the following:

1. All weapons have an equal capability to engage all targets; thus, the firepower is equally distributed among all targets.
2. In a given engagement type, each weapon expends an expected quantity of ammunition regardless of the quantity of targets.
3. Allocation of fire fails to include variations in target availability.

✓ The principal feature of the new attrition algorithm is its use of battle attrition (killer/victim scores), as generated by a high-resolution model, to calculate attrition for differing combat situations. The particular advantage of using the killer/victim scores is that they reflect the engagement attrition as a function of:

- 1- Target acquisition;
- 2- Fire allocation and ammo expenditure, and
- 3- Target and weapon availability.

In addition, such functions as sensors, intelligence, communications, and weather conditions can be simulated in the high-resolution model and their influence on the battle ²carry² forward to the theater model (CEM) in the killer/victim scores.

¹ John E. Shepherd, Concepts Evaluation Model (CEM) Design Specifications for: (1) Attrition and Calibration, (2) Fixed Fortified Defense, General Research Corporation, 1118-01-79-CR, 1979.

2 SPECIFIC TASKS

→ The objective of this study is to modify the Concepts Analysis Agency's version of the CEM so as to replace its present firepower-driven combat assessment logic with the new killer/victim attrition algorithm:

- a. In accordance with design specifications, previously developed by GRC, develop new and modify existing CEM subroutines as required to incorporate the revised attrition process into the CEM.
- b. Develop a set of representative data inputs for testing and validation of "CEM/ATRIT"; (CEM with the revised attrition process incorporated as stated in (a) above).
- c. Validate the CEM utilizing data input derived in (b) above.



3 CEM MODIFICATIONS

3.1 OVERVIEW

Figure 1 shows the macro flow of the CEM using the new attrition algorithm. Heretofore the CEM battle assessment was built around the weapon's firepower potential for each weapon type, by engagement type. This value was a function of the quantity of expected rounds expended, the lethal area of a round, a correlation coefficient which equated the lethal area to the probability of kill, and a battle intensity factor.

These firepower potentials will continue to be used by the CEM in the situation estimation; or until such time as a more desirable method is developed. The absence of a methodology (high-resolution model) to generate the killer/victim scores for the artillery DS, GS, and counter-battery, and the air models' close air support has necessitated the continued use of the firepower potentials for these functions of the battle assessment.

Two new sources of data are now required for the CEM. As shown in Fig. 1, the principal changes to the CEM input data come from a high-resolution model (COSAGE). It is, therefore, imperative that the CEM preprocessor scan the input data (CEM scenario and the new attrition algorithm) for inconsistencies. Such inconsistencies include checking for less weapon types being simulated in the high-resolution model than are being input in the CEM scenario. To attempt to simulate a particular weapon in the CEM, not having included said weapon in the high-resolution model would make the killer/victim scores and the fire allocation inputs invalid.

The new attrition algorithm is contained in two new computer programs. The first, Phase 1, inputs the killer/victim scores and the fire allocation from the high-resolution model. Phase 1 computes the target-to-weapon availability and the probability of kill. These two arrays of data are "passed" to a new subroutine (Phase 2) in the CEM main model. This new subroutine computes the combat attrition and ammunition expenditure for each CEM subsector engagement. The reader is

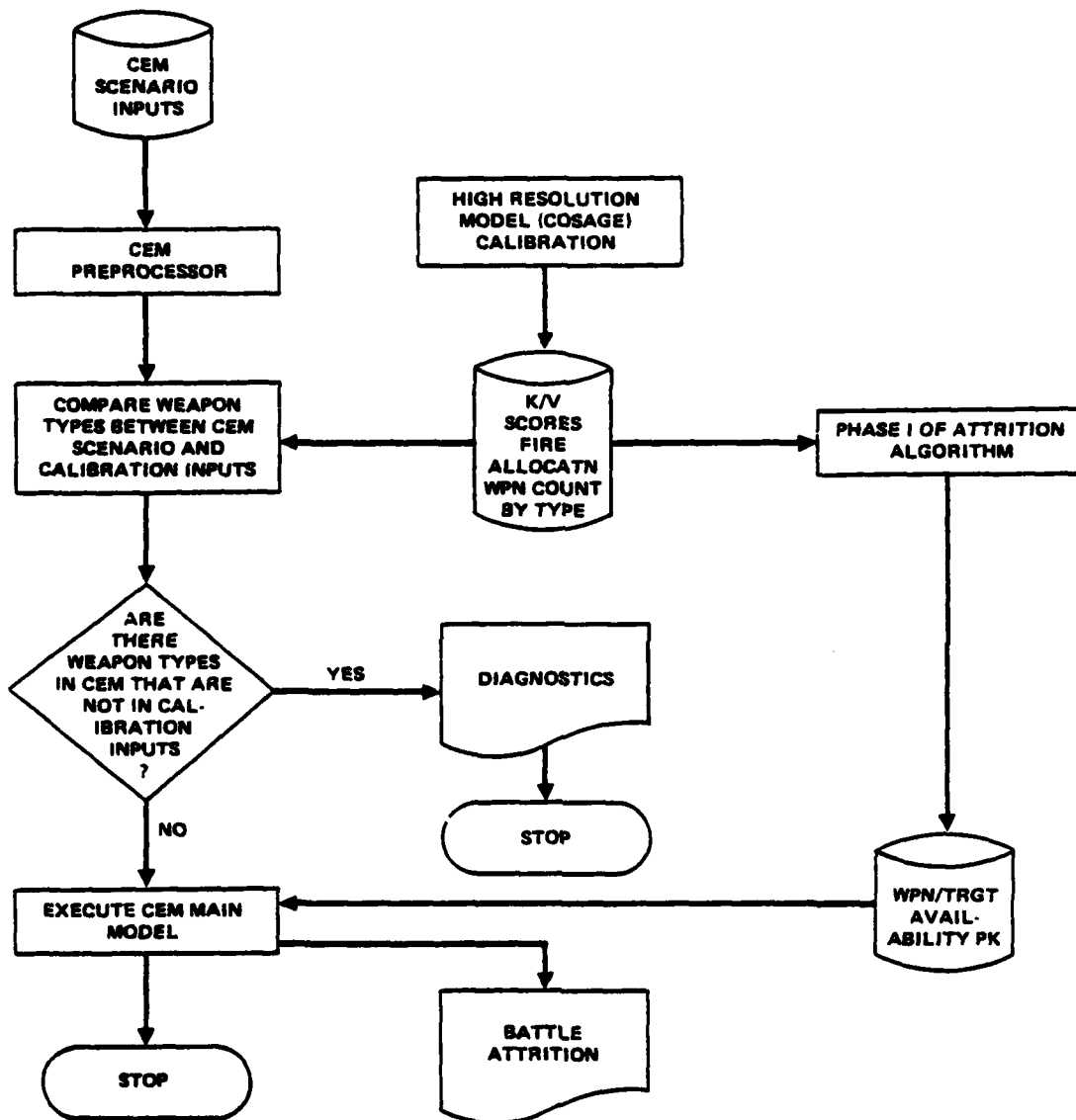


Figure 1. CEM MACRO Flow With New Attrition Algorithm

directed to a previously published report on the new attrition algorithm for a more definitive description of this process.

Due to the current constraints of the CAA UNIVAC 1108 computer (availability memory) the quantity of different weapon types available to each side (Blue/Red) was constrained to three types in each major weapon category¹ i.e., three types of tanks, three types of APCs, three types of helicopters, and three types of AT/M. Each weapon type may have up to two different types of tubes (guns), a main and a secondary. When CAA's new UNIVAC computer becomes available, this limitation can be changed to the normal CEM weapon count of 12 tank types, 12 APC types, 5 helicopter types and 12 AT/M types; this depending on availability of computer memory to the CEM. Assuming the computer memory is adequate, the CEM could account for ammunition by tube type and weapon type.

3.2 PREPROCESSOR

The following section describes the changes to each subroutine in the CEM preprocessor (see Appendix C for a computer listing of these subroutines). To assist the reader in identifying the FORTRAN code changes to the CEM:

- a. Each new/modified statement is commented "@ K/V month-year."
- b. A solid vertical bar drawn in the left-hand margin.

Subroutines requiring modification are: PKLOG, PKSTFL, RDRDIV, RUNSEC, STFILE, UNTSEC, WPNDAT.

SUBROUTINE: PKLOG

This subroutine packs the logistical items due to arrive in theater by theater cycle. This subroutine was modified to input the direct fire

¹ Existing CEM logic which permitted up to 12 types of tanks, 12 types of APCs, 5 types of helicopters, and 12 types of AT/Ms per side remains. Should the new CAA computer have adequate memory to expand the new attrition logic to 41 weapon types, only the new attrition logic will require modification.

weapons' ammo (in rounds in lieu of tons) in units of 1000 rounds per theater cycle (max 2,097,151 rounds).

SUBROUTINE: PKSTFL

This subroutine packs the data entries¹ in each unit's status/file. The ammo is packed to the nearest 10 rounds, (max 1,048,575 rounds) for type 1 and type 2 ammo.

SUBROUTINE: RDRDIV

This subroutine inputs the Red division data and forms its status file. The WPNBUF array size was changed² from (64,12,8) to (46,3,8).

SUBROUTINE: RUNSEC

This subroutine inputs the "run" control parameters and as print options, quantity of weapons types, etc. per side. This subroutine was modified to compare the quantity of weapon types used to generate the killer/victim scores to the quantity being input to the CEM processor. Should there be less weapon types used to generate the killer, victim scores than input to the CEM--an error exists. At present only an error comment is listed in the CEM preprocessor output listing.

Should it be desired to have the CEM automatically call (execute) phase 1 of the new attrition algorithm, this is so noted as a comment statement in this subroutine.

SUBROUTINE: STFILE

This subroutine formulates a unit's status file. Two changes were made to this subroutine: (1) the size of the array WPNBUF was changed from (64,12,8) to (46,3,8), (2) the unit status file now contains the quantity of ammo by tube type 1 and 2 presently on hand. The authorized level is computed by multiplying the quantity of authorized weapons by the TOE stowed load by weapon type and tube type.

¹ See Appendix A, STAFIL.

² See Appendix A, WPNBUF.

SUBROUTINE: UNTSEC

This subroutine inputs the data description for each weapon and battalion type. Changes are:

- (a) The array DESTR (7,12,2,2) which contains the percent of those weapons hit which are totally destroyed includes personnel as a weapon category--here before it did not. (See Appendix A for array description.)
- (b) The array WPNBUF has been redefined as (46,3,8).
- (c) The stowed ammo load by tube type per vehicle is stored in the array WPNBUF. Other changes to the WPNBUF items such as the location of each item within this array are set to this subroutine.
- (d) The full TOE firepower (AT, ALA, AP) for each weapon type is computed here using the meeting engagement firepower by tube type. This number is used later to compute the full TOE firepower of a unit which is the denominator in the unit's "state" computations.

SUBROUTINE: WPNDAT

This subroutine inputs the weapon characteristics and computes the firepower for a meeting engagement by tube type, for each weapon type. Changed to use the firepower by tube types to compute the full TOE firepower of a unit.

3.3 MAIN MODEL

The following section describes the changes to each subroutine in the CEM main model. See Appendix C for a computer listing of these subroutines.

Subroutines requiring modifications or new subroutines are:

ARTDEC	EXCHG	PQMOD
ASSESS	GIVART	RARTS
CASL	HELOSS	READAT
CRQMNT	MATSUM	RESLOS
DDEND	MYOUT	STAMAT
DDSUP	NDSUPY	SUMART
DECRMT	PHASE2	TNKAPC
DECSUP	PKSTFL	

SUBROUTINE: ARTDEC

This subroutine decrements an artillery unit's status file as a function of its expenditures and losses. The arrays RQMNTS and RQMNTX were changed to account for expenditures of ammo by direct fire weapons tube types 1 and 2. As a result the entity locations of the artillery ammo and tube types were shifted. This location shifting of the artillery data required new subscript notations (see Appendix A).

SUBROUTINE: ASSESS

This subroutine controls the combat assessment logic. Changes are:

- a. Initialization of arrays used in the assessment logic.
- b. In each subsector engagement up to 3 separate Blue units may be involved--Bde, Div Air Cav, and the Corps Air Cav. Each unit has its own "on-hand" ammo supply by tube type, therefore, each weapon engaged may be constrained by ammo stowed load of its parent unit's available ammo. Ammo expenditures must be proportioned to each unit depending on the amount stowed (legally expendable) on each weapon (shooter).
- c. This subroutine executes phase 2 of the new attrition algorithm (computes ammo expenditure and weapons hit).

SUBROUTINE: CASL

This subroutine controls the computation of which weapon hit are totally destroyed, repairable, and abandoned. Personnel WIA, DNBI, CMIA, KIA are also computed in this subroutine. Changes are proportioning expenditures by ammo and losses/hits among the units in the engagement. The subroutine HELOSS, which here before used separate computations to compute the helicopter loss, is no longer required. The killer/victim scores now drive the combat assessment logic.

SUBROUTINE: CROMNT

This subroutine computes the unit requirements for weapons, personnel, POL, ammo tubes 1 & 2, and other supplies for a unit and the theater by side. Changes to this subroutine are to account for the two tube types of ammo in the unit and theater requirements arrays.

SUBROUTINE: DDEND

This subroutine controls the resupply to each unit. The changes in this subroutine were to account for the two types of ammo (tubes) now permitted in the CEM. Resupply ammo is entered into the CEM as one number representing both types of ammo to the nearest 1000 rounds. This resupply ammo is divided among the two tube types in proportion of the total theater requirement by side and tube types.

SUBROUTINE: DDSUP

This subroutine allocates resupply resources, weapons, personnel, ammo (by tube type), POL and other supplies, to Blue Corps and divisional air cavalry units. The changes to this subroutine were to account for the two types of ammo in the unit and theater requirements arrays.

SUBROUTINE: DECRMT

This subroutine decrements the expenditures and losses from a unit's status file. Changes to this subroutine were to account for the two types of ammo in the unit and theater requirements arrays.

SUBROUTINE: DECSUP

This subroutine gives men and equipment to Red decimated divisions. Changes to this subroutine were to account for the two types of ammo in the unit and theater requirements arrays.

SUBROUTINE: EXCHG

This subroutine computes the substitution rate between weapon types. The changes were to account for the tube type 1 & 2 ammo subscripting.

SUBROUTINE: GIVART

This subroutine computes and allocates the resupply to the artillery battalions. The changes were to account for the tube type (1&2) of ammo in resupply/requirement computations.

SUBROUTINE: HELOSS

This subroutine is no longer required--DELETED--see write-up on subroutine ASSESS.

SUBROUTINE: MATSUM

This subroutine forms the outcome firepower matrix for both the estimation and engagement assessment logic. The engagement outcome assessment is now computed using the killer/victim scores. That portion of the engagement outcome matrix which uses the firepower scores for the artillery and close air support remains. All other direct fire weapons logic has been deleted.

SUBROUTINE: MYOUT

This subroutine computes the numerical engagement outcome for the estimation logic only. The execution of this subroutine during the battle assessment logic, set for the numerical outcome to a DRAW for the QUIET engagement only.

SUBROUTINE: NDSUPY

This subroutine resupplies the nondivisional artillery battalions. Changes to this subroutine were to keeping track of the ammo by tube type 1 and 2 for the theater shortage computations.

SUBROUTINE: PHASE2 (new subroutine)

This subroutine computes the rounds expended and the hits by whom and against whom by tube type. It also computes the numerical engagement outcome.

SUBROUTINE: PKSTFL

This subroutine packs the data in a unit's status file. The change is to pack the "on-hand" ammo for tube types 1 and 2.

SUBROUTINE: PGMOD

This subroutine computes the constraint due to shortages of ammo, POL or other supplies. The change is to include both tube types of ammo in lieu of just one type of ammo in the ammo constraint computations.

SUBROUTINE: RARTS

This subroutine computes the resupply requirements for artillery. The change was to redesignate the proper subscript in the unit and theater requirements array due to the addition of the two types of ammo.

SUBROUTINE: READAT

This subroutine inputs data from the CEM preprocessor to the CEM main model. The changes are to input from phase 1 of the attrition algorithm the quantity of weapons, by type, used by the high resolution model to generate the killer/victim scores. Also input, from phase 1, is the probability of kill for the ith type weapon killing the jth type target and the availability of the jth type target to the ith type weapon.

SUBROUTINE: RESLOS

This subroutine computes the losses and expenditures for a reserve unit. Changes are to account for two types of ammo in the unit and theater requirements arrays.

SUBROUTINE: STAMAT

This subroutine computes the sum, by unit and side, of the weapons, by type, engaged in an engagement. It also recomputes a unit's state (present firepower/TOE firepower) after the unit is resupplied.

SUBROUTINE: SUMART

This subroutine sums the artillery battalion requirements for resupply. Change is due to accounting for two types of ammo which required redimensioning of the requirements (RQMNTX, RQMNTS) arrays.

SUBROUTINE: TNKAPC

This subroutine computes the kills (given the hits computed in phase 2) and the total breakdowns, abandoned, repairable by unit and weapon type.

4 SUMMARY COMMENTS

This study was limited to the direct-fire weapons (tanks, APCs, helicopters, AT/Ms, and personnel). This limitation was imposed due to:

- a. Currently available computer memory at CAA.
- b. The direct-fire weapon attrition was the most logical subset due to the previously developed attrition algorithm and available data (killer/victim scores).
- c. Uncertainty of the algorithm to define the attrition by indirect-fire weapons (artillery and close air support) to reserve and counter-battery targets.

APPENDIX A

NEW AND/OR MODIFIED VARIABLE AND ARRAY DEFINITIONS

<u>VARIABLE</u>	<u>PAGE</u>
WPNBUF	17
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LOSSES	40
SUMWPN, AMOSTO, UNTWPN	41
THITS, ARTAIR, AMOEXP	42
COLOR, F, AP, KL, Q, E, V, A, P. D	43

1. VARIABLE NAME: WPNBUF (i,j,k)
SIZE: (46,3,8)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The WPNBUF array contains the performance characteristics for each weapon type. This information is used during the battle assessment and resupply phases of the CEM execution.
 - b. Data Entry Definitions:

i =

 - (1) Quantity of personnel in each weapon crew.
 - (2) Quantity of casualties in crew given a hit.
 - (3) Quantity of (2) which are WIA.
 - (4) Enemy AP IFP/minisector which causes 50% suppression of this weapon.
 - (5) Enemy AP IFP/minisector which causes 100% suppression of this weapon.
 - (6-7) Not used.
 - (8) Percent helicopters hit which may be retrieved.
 - (9-10) Not used.
 - (11-12) AT IFP/weapon in a ME for tube types 1 & 2.
 - (13-14) ALA IFP/weapon in a ME for tube types 1 & 2.
 - (15-16) AP IFP/weapon in a ME for tube types 1 & 2.
 - (17-18) POL constraint (P&Q) if POL < requirement.
 - (19-27) POL expended (tons/12 hours) in BAD,, RESERVE.
 - (28) Ammo full TOE stowed load for tube type 1.
 - (29) Ammo full TOE stowed load for tube type 2.
 - (30-31) OTHER supply constraint (P&Q) if OTHER supplies < requirements.
 - (32-40) OTHER supplies expended (tons/12 hours) in BAD,, RESERVE.
 - (41) Fraction of breakdown/12 hours.
 - (42) Fraction of breakdown repairable.
 - (43-44) Ammo consumption for tube type 1 & 2 for a quiet engagement.

(45-46) Ammo consumption for tube type 1 & 2 for a reserve unit.

j = 1-3 up to (3) three different weapon types in each major weapon category; tanks, APCs, helicopters & AT/Ms.

k = 1-4 Blue: 1=tanks, 2=APC, 3=helicopters, 4=AT/M.

5-8 Red: 5=tank, 6=APC, 7=helicopter, 8=AT/M.

c. Miscellaneous: For example, the quantity of ammo of tube type 1 for Red tank type 3 and full TOE stowed load is:

WPNBUF (28,3,5)

1. VARIABLE NAME: FIRALC (i,j,k) CEM PROC
SIZE: (26,2,26)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array FIRALC contains, the quantity of rounds fired by the (i)th type weapon, (j)th type tube, against the (k)th type target. This array is input to the new attrition algorithm (PHASE I) from the high resolution model (COSAGE) engagement.

It is recomputed in PHASE II of the new attrition algorithm based on the CEM engagement weapon mix.

b. Data Entry Definitions:

- i = (1-3) Blue tank types 1, 2 & 3; (weapon).
(4-6) Blue APC types 1, 2 & 3; (weapon).
(7-9) Blue Helicopter types 1, 2 & 3; (weapon).
(10-12) Blue AT/M types 1, 2 & 3; (weapon).
(13) Blue personnel,
(14-26) Red weapon.
- j = (1) Tube type 1
(2) Tube type 2.
- k = (1-3) Blue tank types 1, 2 & 3; (target).
(4-6) Blue APC types 1, 2 & 3; (target).
(7-9) Blue Helicopter types 1, 2 & 3; (target).
(10-12) Blue AT/M types 1, 2 & 3; (target)
(13) Blue Personnel
(14-26) Red targets.

1. VARIABLE NAME: PRBKIL (i, j) CEM PROC
SIZE: (52,26)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array PRBKIL contains the fraction of time (assessment cycle) that the (i)th type weapon can shoot at the (j)th type target. This value is computed in Phase I of the attrition algorithm based on the inputs from the high resolution model (COSAGE). This array is "passed" to Phase II of the attrition algorithm via file (14).
 - b. Data Entry Definitions:
 - i = (1-3) Blue tank types 1-3; (weapons).
 - (4-6) Blue APC types 1-3; (weapons).
 - (7-9) Blue helicopters types 1-3; (weapons).
 - (10-12) Blue AT/M types 1-3; (weapons).
 - (13) Blue Personnel (weapons).
 - (14-26) Red weapons.
 - j = (1-3) Blue tank types 1-3; (targets).
 - (4-6) Blue APC types 1-3; (targets)
 - (7-9) Blue helicopter types 1-3; (targets).
 - (10-12) Blue AT/M types 1-3; (targets).
 - (13) Blue personnel (targets).
 - (14-26) Red targets.

1. VARIABLE NAME: KILLMX (i,j,k) CEM PROC
SIZE: (26,2,26)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array KILLMX contains the quantity of the (k)th type targets hit by the (i)th type weapon, (j)th type tube. This value is computed in PHASE 2 of the new attrition algorithm.
 - b. Data Entry Definitions:
 - i = (1-3) Blue tank types 1-3; (weapons).
(4-6) Blue APC types 1-3; (weapons).
(7-9) Blue helicopter types 1-3; (weapons).
(10-12) Blue AT/M types 1-3; (weapons).
(13) Blue personnel (weapons).
(14-26) Red weapons.
 - j = (1) Tube type 1
(2) Tube type 2.
 - k = (1-3) Blue tank types 1-3; (targets).
(4-6) Blue APC types 1-3; (targets).
(7-9) Blue helicopter types 1-3; (targets).
(10-12) Blue AT/M types 1-3; (targets).
(13) Blue personnel (targets).
(14-26) Red targets..

1. VARIABLE NAME: ATRTN (i,j,k) CEM PROC
SIZE: (26,13,2)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: Same as KILLMX; (hits by (i)th weapon on (j)th target.
 - b. Data Entry Definitions:
 - i = (1-26) Tube type 1, Weapon type 1,, tube type 2, weapon type 13; (weapon).
 - j = (1-13) Target weapon type 1-13.
 - k = (1) Blue weapon.
(2) Red weapon.

1. VARIABLE NAME: RATE (i) CEM PROC
SIZE: (52)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array RATE contains the quantity of rounds, full TOE stowed load, by weapon and tube type. These values are derived for each weapon type from the array WPNBUF.
 - b. Data Entry Definition:
 - 1 = (1) Tube type 1 tank type 1, (Blue).
 - (2) Tube type 2 tank type 1, (Blue).
 - (3) Tube type 1 tank type 2, (Blue).
 - (4) Tube type 2 tank type 2, (Blue).
 - .
 - .
 - .
 - (26) Tube type 2 Personnel,* (Blue).
 - (27-52) Red ammo stowed load.

* Personnel shoot only tube type 2.

1. VARIABLE NAME: QNTRND (1) CEM PROC
SIZE: (26)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array QNTRND contains the target priority for a given weapon. This value is computed in PHASE II of the new attriton algorithm.
 - b. Data Entry Description:
i = (1-26) Weapon types

1. VARIABLE NAME: VNBR (1) CEM PROC
SIZE: (52)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array VNBR contains the average quantity of weapon by weapon/tube type (1). This is computed in PHASE II of the new attrition algorithm.

b. Data Entry Description:

i = (1-52) Tube 1, weapon 1
tube 2, weapon 13 Blue,
tube 3, weapon 13 Red.

1. VARIABLE NAME: EXPNDR (i,j) CEM PROC
SIZE: (26,2)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array EXPNDR contains the quantity of ammo expended by the (i)th weapon/tube type by side (j). This is computed in PHASE II of the new attrition algorithm.
 - b. Data Entry Description:

i = (1-26) tube type 1, weapon type 1,, tube type 2, weapon type 12.

j = (1) Blue
(2) Red.

1. VARIABLE NAME: VVV (i, j) CEM PROC
SIZE: (26,2)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array VVV contains the intrinsic value of the (i)th weapon, by tube type (j).

1. VARIABLE NAME: STAFIL (i,j) CEM PROC
SIZE: (139, 4)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The STAFIL array contains personnel IFP's, supply requirements and other current unit status information for 139 data items. This array will contain current unit status data only during the battle assessment phase of the CEM's execution.
 - b. Data Entry Definition: (j) 1 = Blue Online Bde, 2 = Red Online Div, 3 = Blue Online Air Cav Unit associated with the Blue brigade's headquarters corps, 4 = Blue divisional air cav unit.
 - c. Data Items:
 - (1-2) Authorized and actual personnel, excluding crews.
 - (3-9) AT IFP/man for BAD, BAPD, BAHD, ME, RAHD, RAPD, RAD engagements.
 - (10-16) ALA IFP/man for BAD, BAPD BAHD, ME, RAHD, RAPD, RAD engagements.
 - (17-23) AP IFP/man for BAD, BAPD, BAHD, ME, RAHD, RAPD, RAD engagements.
 - (24) Troop condition.
 - (26-26) Authorized and actual tons of POL.
 - (27-35) POL tons expended/man for BAD, ..., RAD, STATIC, RESERVE.
 - (36) Rounds of tube type 1 ammunition on hand.
 - (37) Rounds of tube type 2 ammunition on hand.
 - (38-46) Ammo rounds expended/man for BAD, ..., RAD, STATIC, RESERVE.
 - (47-48) Authorized and actual OTHER supply tons.
 - (49-57) OTHER supply tons expended/man for BAD, ..., RAD, STATIC RESERVE.
 - (58-81) Authorized and actual quantities of tank types 1, 2, ..., 12.

(82-105) Authorized and actual quantities of light armor
(APC) types 1 12.

(106-115) Authorized and actual quantities of helicopters
types 1 12.

(116-139) Authorized and actual quantities of AT/M types
1 12.

- d. Miscellaneous. Each call to the subroutine "UPSTEL" will
unpack these 139 entries.

UNPACK:

CALL UPSTFL (IBDE, ISIDE)

where: IBDE = index of unit

ISIDE = see Data Entry Definition

PACK:

CALL PKSTFL (IBDE, ISIDE) parameters same as UPSTFL

1. VARIABLE NAME: AVTIME (1,j) CEM PROC
SIZE: (52, 26)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array AVTIME is the same
as PRBKIL array.

1. VARIABLE NAME: PKILL (i, j) CEM PROC
SIZE: (52,26)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array PKILL contains the probability that the (i)th type weapon hits the (j)th type target/round fired.

b. Data Entry Description:

i = (1-26) Blue tube type 1, weapon type 1, tube type 2,
weapon type 2.

(27-52) Red

j = (1-13) Blue targets

(14-26) Red targets

1. VARIABLE NAME: DPRIOR (i, j) CEM PROC
SIZE: (26,26)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array DPRIOR contains an indicator (zero or one), indicating if there is a higher priority target than the one currently being processed.

1. VARIABLE NAME: COMMON/TRQMNX/RQMNTX (i, j)
SIZE: (6,3)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array RQMNTX is the total requirement for major item (i) by partition (j).
 - b. Data Entry Definitions:
 - i = (1) Personnel
 - (2) POL
 - (3) Ammo tube type 1
 - (4) Ammo tube type 2
 - (5) OTHER supplies
 - (6) Artillery AMMO

1. VARIABLE NAME: COMMON/TRQMNS/RQMNTS (i, j)
SIZE: (52,2)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The RQMNTS array contains the side's (j) shortage of major items and weapons. This is the sum total of all shortages for an assessment cycle for all units by side, (j=1=Blue, 2=Red).
 - b. Data Entry Definitions:
i = (1) Personnel
(2) POL
(3) Ammo tube type 1
(4) Ammo tube type 2
(5) OTHER supplies
(6-17) Tank types 1-12
(18-29) APC types 1-12
(30-34) Helicopter types 1-5
(35-46) AT/M types 1-12
(47-54) Artillery tubes 1-8
(55) Artillery Ammo

1. VARIABLE NAME: COMMON/REQIT/REQUIR (i)
SIZE: (46)

2. ARRAY SPECIFICATIONS

a. General Description and Usage: The REQUIR array contains the unit's shortage of major items and weapons. This is computed only when a unit has completed all of its engagement or at the end of an assessment cycle for reserve units.

b. Data Entry Definitions:

- i = (1) Personnel
- (2) POL
- (3) Ammo tube type 1
- (4) Ammo tube type 2
- (5) OTHER supplies
- (6-17) Tank types 1-12*
- (18-29) APC Types 1-12*
- (30-34) Helicopter types 1-5*
- (35-46) AT/M types 1-12*

*The CEM "normally" will accept up to (12) twelve types of tanks, APCs and AT/Ms and up to (5) five types of helicopters. Due to the present constraint of available computer memory, at CAA, the limit is (3) three types of weapons in each major weapon category. To ease the future expansion to the full CEM capability, when additional computer memory is available, existing CEM weapon counts remain in tact.

1. VARIABLE NAME: COMMON/YCONST/YVALW (i,j,k), YVALP (i)
SIZE: (12,4,2), (4)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array YVALW contains the constraint, if any, due to shortages of either POL, AMMO or OTHER supplies for each weapon type (i) for each unit engaged (j) for each tube type (k). This is computed in subroutine PQMOD.
 - b. Data Entry Definition:
 - i = (1-3) Tanks by type
(4-6) APCs by type
(7-9) Helicopters by type
(10-12) AT/M by type
 - j = (1) Blue Bde
(2) Red Div
(3) Blue Corps Air Cav
(4) Blue Div Air Cav
 - k = (1) Tube type 1
(2) Tube type 2
 - a. General Description and Usage: The array YVALP contains the constraint for personnel due to shortage(s) of POL, AMMO or OTHER supplies. This value is computed in subroutine PQMOD.
 - b. Data Entry Definitions:
 - i = (1) Blue Bde
(2) Red Div
(3) Blue Corps Air Cav
(4) Blue Div Air Cav

1. VARIABLE NAME: COMMON/GRC/AMMO (i)
SIZE: (52)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: This array contains the full TOE ammo load by weapon and tube type. Computed in subroutine READAT, used in subroutine PHASE 2.
 - b. Data Entry Description:

i = (1) Tube type 1, weapon type 1
(2) Tube type 2, weapon type 1
(3) Tube type 1, weapon type 2
.
.
.
(52) Tube type 2, weapon type 13

1. VARIABLE NAME: COMMON/AMOTYP/XTANK (i,j),
XAPC (i,j),
XATM (i,j),
XHELO (i,j)
SIZE: (12,2), (12,2), (13,2), (5,2)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: These arrays accounted for the ammo expended by weapon type. As a result of the addition of up to 2 tube types these array now account for ammo expenditure by weapon type (i) and by tube type (j).

b. Data Entry Description:

i = (1-12) Weapon type

j = (1-2) Tube type 1 or 2

1. VARIABLE NAME: DESTR (i,j,k,l)
SIZE: (7,12,2,2)

2. ARRAY SPECIFICATIONS:

a. General Description and Usage: The array DESTR contain the percent of the weapons (hit) which are totally destroyed.

b. Data Entry Description:

i = shooting category

(1) tank	(5) Personnel
(2) APC	(6) Arty
(3) helicopter	(7) CAS
(4) AT/M	

j = target weapon type

k = target category

(1) tanks
(2) APC

l = side 1 or 2

1. VARIABLE NAME: COMMON/BIGLOS/LOSSES (i,j)
SIZE: (46,4)
2. ARRAY SPECIFICATIONS:
 - a. General Description and Usage: The array LOSSES contains the losses; damaged, destroyed, lost, and expended, for an engagement by unit engaged. This value is computed in subroutines CASL and TNKAPC.
 - b. Data Entry Definition:
 - i = (1) Personnel
(2) POL (tons)
(3) Ammo tube type 1 (rounds)
(4) Ammo tube type 2 (rounds)
(5) OTHER supplies (tons)
(6-17) Tanks by type
(18-29) APCs by type
(30-34) Helicopters by type
(35-46) AT/M by type
 - j = (1) Blue Bde
(2) Red Div
(3) Blue Corps Air Cav
(4) Blue Div Air Cav

1. VARIABLE NAME: COMMON/WPNCT/SUMWPN (i,j,k)
AMOSTO (i,j,k),
UNTWPN (i,j),
SIZE: (13,2,3), (2,13,2), (13,4)

2. ARRAY SPECIFICATIONS:

SUMWPN

- a. General Description and Usage: The array SUMWPN contains the sum of weapon type (i) on side (j) in the engagement. These values are computed in the subroutine STAMAT.
- b. Data Entry Definition:
 - i = (1-13) weapon type (1-13)
 - j = (1-2) side (Blue, Red)
 - k = (1) count of all weapons
 - (2) count of only weapons which are 100% effective
 - (3)

AMOSTO

- a. General Description and Usage: The array AMOSTO contains the count of rounds by tube type (i), weapon type (j), side (k). This value is computed by subroutine ASSESS.

UNTWPN

- a. General Description and Usage: The array UNTWPN contains the count of weapons, by weapon type (i), by unit (j) in the engagement. This value is computed in subroutine STAMAT
- b. Data Entry Definition:
 - i = (1-13) Weapon type
 - j = (1-4) 1 Blue Bde; 2 Red Div;
3 Blue Corps Air Cav;
4 Blue Div Air Cav

1. VARIABLE NAME: COMMON/AJJS/THITS (i, j)
ARTAIR (i,j),
AMOEXP (i,j)
SIZE: (13,2), (13,2), (26,2)

2. ARRAY SPECIFICATIONS:

THITS

- a. General Description and Usage: The array THITS contains the total hits against the (i)th type weapon on the (j)th side by the enemy direct fire weapons. These values are computed in subroutine PHASE II.
- b. Data Entry Definition:
i = (1-13) Weapon type 1-13
j = (1-2) Side Blue & Red

ARTAIR

- a. The array ARTAIR contains the total hits against the (i)th type weapon on the (j)th side by enemy artillery and CAS. These values are computed in subroutine TNKAPC.
- b. Data Entry Definition:
i = (1-13) Weapon type 1-13
j = (1-2) Side

AMOEXP

- a. General Description and Usage: The array AMOEXP contains the quantity of rounds, by tube, expended by each weapon. These values are computed in subroutine PHASE II.
- b. Data Entry Description:
i = (1-26) Blue weapon type 1, tube type 1 Red weapon type 13, tube type 2
j = side, 1 = Blue, 2 = Red

1. VARIABLE NAME: Dimension COLOR (2), F (26,2,26), AP (52,26),
KL (26,2,26), Q (26), E (26,2), V (26,2),
A (52,26), P (52,26), D (26,26)

2. ARRAY DESCRIPTIONS:

- a. General Description and Usage:

COLOR (i); Blue or Red, used in report generation to denote side

F (i,j,k); rounds fired by (i)th type weapons, tube type (j) at target type (k)

AP (i,j); average fraction of an assessment cycle that target type (j) is available to weapon type (i)

KL (i,j,k); quantity of targets of type (k) hit/killed by weapon type (i) tube type (j)

Q (i); the priority of target type (i), where Q (i) equals the probability that a weapon can kill target type (i) time target type (i)'s relative importance.

E (i,j); quantity of rounds expended by weapon type (i), tube type (j).

V (i,j); same as VVV

A (i,j); same as AP

P (i,j); probability that the (i)th type weapon hits/kills the (j)th type target.

D (i,j); same as DPRIOR.

APPENDIX B
MODIFIED CARD INPUT FORMATS

<u>CARD DESCRIPTION</u>	<u>PAGE</u>
Weapon Description (Tank)	47
Weapon Description (Light Armor)	48
Weapon Description (Helicopter)	49
Weapon Description (AT/M)	50
Destroyed Weapons	51
Weapon Description (AT IFP)	52
Weapon Description (ALA IFP)	53
Weapon Description (AP IFP)	54
Weapon Description (Ammo Rqmnts)	55
Manevuer Bn Type Definition	56

INTENTIONALLY BLANK

WEAPON DESCRIPTION (TANK) CARD (K/V)

FORMAT 2A4,3X,3F5.0, 6F4.2,23X,A3,I5

Col 1-8 "TANKTYPE"
Col 9-10 Blank
Col 11-15 Quantity of personnel in crew
Col 16-20 Quantity of casualties to crew, given a hit
Col 21-25 Quantity of crew casualties wounded, given a hit*
Col 26-33 Not used
Col 34-37 TOE ammo stowed load/weapon, tube type 1***
Col 38-41 TOE ammo stowed load/weapon, tube type 2***
Col 42-45 Breakdowns per 100 weapons engaged
Col 46-49 Percent of breakdowns repairable**
Col 50-72 Optional comments
Col 73-75 Sequence label
Col 76-80 Sequence number

* Crew KIA equals total crew casualties minus crew casualties wounded.

** All other breakdowns are non-repairable and are counted as permanent losses.

*** Rounds.

WEAPON DESCRIPTION (LIGHT ARMOR) CARD (K/V)

FORMAT 2A4,2X,3F5.0,6F4.2,23X,A3,I5

Col 1-8 "LARMTYPE"
Col 9-10 Blank
Col 11-15 Quantity of personnel in crew
Col 16-20 Quantity of casualties to crew, given a hit
Col 21-25 Quantity of crew casualties wounded, given a hit*
Col 26-29 Enemy AP IFP per minisector at which 50 percent suppression of friendly AT firepower is caused.**
Col 30-33 Enemy AP IPP per minisector at which 100 percent suppression of friendly AT firepower is caused**
Col 34-37 TOE ammo tube type 1 stowed load****
Col 38-41 TOE ammo tube type 2 stowed load****
Col 42-45 Breakdowns per 100 weapons engaged
Col 46-49 Percent of breakdowns repairable***
Col 50-72 Optional comments
Col 73-75 Sequence label
Col 76-80 Sequence number

* Crew WIA equals total crew casualties minus crew casualties wounded

** Value for 50 percent suppression < value for 100 percent suppression.
ON/OFF suppression is contained on RUNLIMIT Card

*** All other breakdowns are non-repairable and are counted as permanent losses.

**** Rounds.

WEAPON DESCRIPTION (HELICOPTER) CARD (K/V)

FORMAT 2A4,2X,3F5.0,6F4.2,35X,A3,I5

Col 1-8 "HELOTYPE"
Col 9-10 Blank
Col 11-15 Quantity of personnel in crew
Col 16-20 Quantity of casualties to crew, given a hit
Col 21-25 Quantity of crew casualties wounded, given a hit
Col 26-29 Fraction of helicopters downed that may be retrievable
Col 30-33 Breakdown rate/100 weapons
Col 34-37 Percentage of breakdowns repairable
Col 38-41 TOE ammo tube type 1, stowed load*
Col 42-45 TOE ammo tube type 2, stowed load*
Col 46-72 Optional comments
Col 73-75 Sequence label
Col 76-80 Sequence number

* Rounds.

WEAPON DESCRIPTION (ANTITANK, MORTAR) CARD (K/V)

FORMAT 2A4,2X,3F5.0,6F4.2,23X,A3,I5

Col	1-8	"ATNKTYPE"
Col	9-10	Blank
Col	11-15	Quantity of personnel in crew [*]
Col	16-25	Not used
Col	26-29	Enemy AP IFP per minisector at which 50 percent suppression of friendly AT firepower is caused
Col	30-33	Enemy AP IFP per minisector at which 100 percent suppression of friendly AT firepower is caused.
Col	34-37	TOE ammo stowed load, tube type 1 ^{**}
Col	38-41	TOE ammo stowed load, tube type 2 ^{**}
Col	42-72	Blank
Col	73-75	Sequence label
Col	76-80	Sequence number

* In order for a replacement AT/M weapon to be issued to a unit, sufficient personnel must be present in the unit's status file to provide crews for the replacement weapon(s).

** Rounds.

DESTROYED WEAPONS CARD (K/V)

FORMAT 2A4,2X,7F5.0,27X,A3,I5

Col 1-8	"DESTROYD"
Col 9-10	Blank
Col 11-15	Fraction of the weapons hit by tanks which are totally destroyed
Col 16-20	Fraction of the weapons hit by light armor which are totally destroyed
Col 21-25	Fraction of the weapons hit by helicopters which are totally destroyed
Col 26-30	Fraction of the weapons hit by AT/M which are totally destroyed
Col 31-35	Fraction of weapons hit by personnel which are totally destroyed
Col 36-40	Fraction of the weapons hit by artillery which are totally destroyed
Col 41-45	Fraction of the weapons hit by CAS which are totally destroyed
Col 46-72	Blank
Col 73-75	Sequence label
Col 76-80	Sequence number

WEAPON DESCRIPTION (AT IFP) CARD (K/V)

FORMAT 2A4,2X,7F6.2,20X,A3,I5

Col 1-8 "WPNTYPE2"

Col 9-10 Blank

Col 11-16 AT IFP per weapon for tube type 1, ME*

Col 17-22 AT IFP per weapon for tube type 2, ME*

Col 23-72 Blank

Col 73-75 Sequence label

Col 76-80 Sequence number

*MEETING ENGAGEMENT; used to recompute unit's state after resupply.

WEAPON DESCRIPTION (ALA IFP) CARD (K/V)

FORMAT 2A4,2X,7F6.2,20X,A3,I5

Col 1-8 "WPNTYPE3"

Col 9-10 Blank

Col 11-16 ALA IFP per weapon for tube type 1, ME

Col 17-22 ALA IFP per weapon for tube type 2, ME

Col 23-72 Blank

Col 73-75 Sequence label

Col 76-80 Sequence number

WEAPON DESCRIPTION (AP IFP) CARD (K/V)

FORMAT 2A4,2X,7F6.2,20X,A3,I5

Col 1-8 "WPNTYPE4"

Col 9-10 Blank

Col 11-16 AP IFP per weapon for tube type 1, ME

Col 17-22 AP IFP per weapon for tube type 2, ME

Col 23-72 Blank

Col 73-75 Sequence label

Col 76-80 Sequence number

WEAPON DESCRIPTION (AMMO RQMTS) CARD (K/V)

FORMAT 2A4,10X,9F6.2,A3,I5

Col 1-8 "WPNTYPE6"
Col 9-18 Blank
Col 19-24 Ammo requirements (in rounds)* for a quiet engagement,
tube type 1
Col 25-30 Ammo requirements (in rounds)* for a quiet engagement,
tube type 2
Col 31-36 Ammo requirements (in rounds)* for a reserve unit,
tube type 1
Col 37-42 Ammo requirements (in rounds)* for a reserve unit,
tube type 2
Col 43-72 Blank
Col 73-75 Sequence label
Col 76-80 Sequence number

*Per division cycle (12 hours).

MANEUVER BN TYPE DEFINITION CARD (K/V)
(Antitank Firepower)

FORMAT 2A4,2X;10F6.2,2X,A3,I5

Col 1-8 "MNBNTYPE"
Col 9-10 Blank
Col 11-16 Quantity of personnel (not weapon crews) assigned to this
bn type
Col 17-34 Blank
Col 35-40 Antitank (AT) firepower for ME from personnel
Col 41-58 Blank
Col 59-64 ON Hand Ammo (units of 10 rounds)* of tube type 1
Col 65-70 ON Hand Ammo (units of 10 rounds)* of tube type 2
Col 71-72 Blank
Col 73-75 Sequence label
Col 76-80 Sequence number

NOTE: Above IFP values are for 12 hours

* I.e. an entry of 100 is in fact 1000 rounds.

APPENDIX C

FORTRAN PROGRAM LISTINGS
(New or Modified CEM Programs)

LIST OF SUBROUTINES & DATA IN K8ATRIT FILE

ARTDEC	PKSTFA
ASSESS	PKSTFL/MAIN
CASL/POST	PKSTFL/PRE
CEM PROC	POSTPROC
CRQMNT	PQMD
DATA-I	RARTS
DATA-II	RDTCM
DDEND	READAT
DDSUP	RESLOS
DECRMT/POST	RUN/MAIN
DECSUP	RUN/POST
DIVRPT	RUN/PRE
EXCHG	RUNJCL
GIVART	RUNSEC
MAP/MAIN	RUNSEC/DATA
MAP/POST	STAMAT
MAP/PRE	STFILE
MATSUM	SUMART
MYOUT	TNKAPC/POST
NDSUPY	UNTSEC
OWT	UPSTFL/MAIN
PHASEONE	WPNDAT
PHASE2	XLCAL
PKLOG	

The following subroutines (CEM Post Processor) were not changed, but required recompilation due to COMMON array changes.

ADDCOP, CUTSUM, DIVSUM, LOGREP, NFTGEN, NGTTYP,
PRBDIV, PROCDV, PROCTS, PROCUT, PRRDIV, PRTBDE,
RDRDIV, SKEL, STATRP, UPSTFL, UTLOG, UTREP.

..... 55155'

***** ASSESS *****

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000329 C COMPUTE THE AMMO STORED LOAD FOR PERSONNEL
000330 C THIS IS DONE TO THE WEIGHTED AVERAGE BY UNIT
000331 C OF THE STORED LOAD BY ENGAGEMENT TYPE.
000332 C
000333 C PERSONNEL SHOOT ONLY TUBE TYPE TWO AMMO
000334 C
000335 DBRIG=STAFIL(137*NGAGMT,1)*UNITMPL(13,1)
000336 DBCORP=STAFIL(137*NGAGMT,1)*UNITMPL(13,2)
000337 DBDIV=STAFIL(137*NGAGMT,1)*UNITMPL(13,3)
000338 SURALL=BRIG*DBCORP+DBDIV
000339 AMOSTO12,13,11=(DBRIG/SUMALL)*STAFIL(137*NGAGMT,1)
000340 DBTCORP=SUMALL*STAFIL(137*NGAGMT,1)
000341 DBDIV=SUMALL*STAFIL(137*NGAGMT,1)
000342 AMOSTO12,13,21=STAFIL(137*NGAGMT,2)
000343 C
000344 CS BRIG=STAFIL(137*NGAGMT,1)*UNITMPL(13,1)
000345 CS DBCORP=STAFIL(137*NGAGMT,1)*UNITMPL(13,2)
000346 CS DBDIV=STAFIL(137*NGAGMT,1)*UNITMPL(13,3)
000347 CS SURALL=BRIG*DBCORP+DBDIV
000348 CS AMOSTO12,13,11=(DBRIG/SUMALL)*STAFIL(137*NGAGMT,1)
000349 CS DBTCORP=SUMALL*STAFIL(137*NGAGMT,1)
000350 CS DBDIV=SUMALL*STAFIL(137*NGAGMT,1)
000351 CS AMOSTO12,13,21=STAFIL(137*NGAGMT,2)
000352 C
000353 SUBROUTINE WDOOT WILL COMPUTE THE ARTY AND CAS EFFECTIVE
000354 C FIRE-POWER FOR THE ASSESSMENT LOGIC TO BE USED BY THE
000355 C SUBROUTINE CASL TO COMPUTE THE PERSONNEL AND WEAPON
000356 C LOSSES DUE TO ARTY AND CAS....K/V 4-80
000357 C
000358 ZVVI KOUT=DOOTINGAGMT(117,0),LATER
000359 C
000360 C NEW KILLER/VICTIM SCORE ATTRITION K/V 4-80
000361 C
000362 C ASSESS SUBSECTOR ATTRITION AND AMMO EXPENDITURE
000363 C
000364 C INPUTS:
000365 C AMOSTO12,13,21 INTAKE TYPE, JWPW TYPE, KASTOE, (STORED LOAD).
000366 C AMOSTO12,13,21 INTAKE TYPE, JWPW TYPE, KASTOE, (STORED LOAD).
000367 C
000368 C KASTOE=137*21 WEAPON TYPE TYPE 1321, JWPW TYPE,
000369 C KSHOOTER SIDE. (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000370 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000371 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000372 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000373 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000374 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000375 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000376 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000377 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000378 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000379 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000380 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000381 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000382 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000383 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
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000387 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000388 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000389 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000390 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000391 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000392 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000393 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000394 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000395 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000396 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000397 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000398 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000399 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000400 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000401 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000402 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000403 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000404 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000405 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000406 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000407 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000408 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000409 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,
000410 C KSHOOTER TYPE, (HITS BY (1) SHOOTER TYPE AGAINST (1) TARGET TYPE,

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***** ASSESS *****

..... 55355N

00041	55	NF11(KNTNFR)=MGENT
00042	55	NF12(KNTNFR)=JUDEB
00043	55	PR13(KNTNFR)=JOTHB
00044	55	NF14(KNTNFR)=IDVTP
00045	55	PR15(KNTNFR)=OIOINR
00046	55	C

```

000410 55 C-----GET FEBA ADVANCE
000415 55 C
000420 55 2100 IFBCHOKFESCH (NSAGT,1TR,ROUT)
000421 55 C-----OFF BLUE IS THE DEFENDER AND IS IN DELAY, THE FEBA MOVEMENT
000422 55 C THRESHOLD IS MODIFIED TO SHOW NEG'S SLOAP ADVANCE DUE TO BARR

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000424 55      IF IFEBC=1, I=I+DOFF = .5
000425 55      IF I=7, I=I+DOFF=1, IFEBC=FLOAT(IFEBC), I=MOD(I, DOFF)
000426 55      C      .. SOUTH TO NORTH ..
000427 55      KVAL=KROSS(I, I+INT(I/DOFF), IFEBC, I+DOFF)
000428 55      C      ..      END

```

```

55 C
000430
55 C CALCULATE AIRCRAFT LOSSES
000431
55 Z101 ACCASB=ACCASB*WIDTH*ACR*SPAR(MSNR*1)*SDAB*W*DTMB/WIDTH
000432
55 MSNBDZ=MSNB(I*NOBDET*1)
000433
55 ACCASB(I*NOBDET)=ACCASB(I*NOBDET)+W*DTMB*ACB(I*NOBDET)*SPAR(MSNBDET)*
000434

```

000436	55	CS	IF JIPP,EG,LI GO TO S010
000437	55	C	NEXT 2 LINES ADDED FOR FEBA MOVEMENT PRINT, JUNE 79
000438	55		WRITE(10,249)IFEBCH
000439	55	249	FORMAT(10,'FEBA MOVEMENT BEFORE ADJUSTMENT',16)
000440	55		PRINT 1245,ACR,SPAR(MSHN+1),GDAB,ACCASR

600443	55	0, 6004, BLUE ADA FU =:F7,3,1 SQDRS LOST THIS SECTOR=:F8,4)
600443	55	PRMT 1853 KCH (INDBE):SPAB (MSBDE);GOIRACZ,SB (INDBE)
600444	55	1253 FORMATEA, BLUE CAS SQDRS IN 05=:F6,2,1 (INOLE BUE), LOSS RATE=
600445	55	0, 6004, RED ADA FU =:F7,3,1 SQDRS LOST THIS SECTOR=:F8,4)
600446	55	C

000499	55	C	*****ADJUST/RESET FCBAT CALCULATE RJ TERMS
000450	55	C	S000 CALL ADJUSTINGAGMT, JFEBCH, MININT, LMIN, LFEB, INUEND, IFLNKS, I
000451	59	C	
000452	55	C	ASSESS CASUALTIES AND WEAPON LOSSES
000453	59	C	

[illegible]

000001	55	C	
000002	55	C	
000003	55	C	
000004	55		00 SOUTH TO NORTH 00 (F15N.E4.) GO TO 9495
000005	55		WINTERCAMP

C00467 95 GO TO 9996
 ASSES
 DATE 191800 PAGE 0

000000 CASL/POST 000000

000000 CASL/POST

000000 CASL/POST

000000 CASL/POST

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DATE 070800 PAGE 9

000000 CASL 000000

..... CASL/POST
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000244 12 C K/V 4-80
000245 12 C K/V 4-80
000246 12 C K/V 4-80
000247 12 C K/V 4-80
000248 12 C K/V 4-80
000249 12 C K/V 4-80
000250 12 C K/V 4-80
000251 12 C K/V 4-80
000252 12 C K/V 4-80
000253 12 C K/V 4-80
000254 12 C K/V 4-80
000255 12 C K/V 4-80
000256 12 C K/V 4-80
000257 12 C K/V 4-80
000258 12 C K/V 4-80
000259 12 C K/V 4-80
000260 12 C K/V 4-80
000261 12 C K/V 4-80
000262 12 C K/V 4-80
000263 12 C K/V 4-80
000264 12 C K/V 4-80
000265 12 C K/V 4-80
000266 12 C K/V 4-80
000267 12 C K/V 4-80
000268 12 C K/V 4-80
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000270 12 C K/V 4-80
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000279 12 C K/V 4-80
000280 12 C K/V 4-80
000281 12 C K/V 4-80
000282 12 C K/V 4-80
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000295 12 C K/V 4-80
000296 12 C K/V 4-80
000297 12 C K/V 4-80
000298 12 C K/V 4-80
000299 12 C K/V 4-80
000300 12 C K/V 4-80
000301 12 C K/V 4-80
000302 12 C K/V 4-80
000303 12 C K/V 4-80
000304 12 C K/V 4-80
000305 12 C K/V 4-80

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000300 12 C ADD ENEMY ARTY 8 CAS TYPEOVER
000301 12 C
000302 12 C ENIFF=UNATRT3:ISIDE:UNATRT3:ISIDE:ISD)
000303 12 C IF(ENIFF.LE.0.0) GO TO 12
000304 12 C COMPUTE THE EXPONENT
000305 12 C X=-1.001*PCASLINGAGHT,IS:ENIFF/MIDTH)
000306 12 C
000307 12 C
000308 12 C
000309 12 C
000310 12 C
000311 12 C
000312 12 C
000313 12 C
000314 12 C
000315 12 C
000316 12 C
000317 12 C
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000351 12 C
000352 12 C
000353 12 C
000354 12 C
000355 12 C
000356 12 C
000357 12 C
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000359 12 C
000360 12 C
000361 12 C
000362 12 C

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END LIT.

***** CENPROC *****

000001 KASIRALI, CENPROC

POP1201 072-10 09/08/80 0011116 (C.1) MI

PE0001 PROC PROC

0000 COMMON/BUDEDIV/ STPZEG, BILCSPTKFACT11212121, WPHOUT1481181,
0001 * FIALC(126,2,26), PABKIL(152,26), KILLMA(26,2,26), AIRIN(26,13,21),
0002 * RATE(192), PHSUM1021, SMTRMT26), VMDR1521, TEXPHDR(26,2), VVV(26,21),
0003 * DUNCEN(121), TERM(147), TERCCT(13,610),
0004 * STAT01210211, STARTECT1191, SHOR12012121,
0005 * RMHIPP(13,4,50), STARTECT1191, RMHCL(15,125),
0006 * RACTP(13), POSCT112171,
0007 * POOL(15,54,2), PEOPLE(10,2), WPR(6,335),
0008 * MINOT0201,2,31, MINTEC0201,2,31, MINTEC0201,2,31,
0009 * INPOOL(14,50), ISFILE(13,81), NMHPP(13,5,125), GFEB 74 CAA
0010 * MCSRT1111, MKTECT112171, MEERT171,
0011 * MELIPP(13,5,110), HEKTRA(17,51), FUNCT11000),
0012 * PEM13101, PEBRT3101, DMHCL1111701,
0013 * DMH131,299,31, DAVAIL(54,2), CFACT112,16,21,
0014 * TC-051451, CAMEL115,051, CDHIST11249131,
0015 * COL051435,01, CANNON146,0,21, DMHPP(13,5,5),
0016 * SMHPP(13,1001, SMHPP1101, DMHPP10571,
0017 * BACIFP(13), AVAIL(54,2), ARTISA(14,530),
0018 * ART01211111,21, INCHIST1111,21, AVTIME0821261, PKILL152,261,
0019 * DPATOR(126,26)
0020 * NERL KTELM

***** CASL/POST *****

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000001	11	COMPILE TAB "1"	
000002	11	SUBROUTINE CROHMT (1000,1,1004)	
000003	11	C	
000004	11	C CALLED BY ASSESS	
000005	11	C CALLED BY WESLOS	
000006	11	C	
000007	11	INCLUDE PROC	
000008	11	C THIS SUBROUTINE COMPUTES REQUIREMENTS FOR THIS UNIT AND ALL	
000009	11	C INREQ=TOTAL REQUIREMENTS FOR TREATEN	
000010	11	C INREQ=TOTAL REQUIREMENTS FOR UNIT	
000011	11	COMMON/INREQ/REQUIREMTS1	8 K/V 4-B3
000012	11	COMMON/INREQ / INTCYC,MACYC,INCCYC,INDCTC	
000013	11	COMMON/BCORP/BCORP,BCORPST01	
000014	11	INCLUDE BICORP	
000015	11	COMMON/INREQ/INREQNTS155,21	8 K/V 4-B3
000016	11	C 1=PERSONNEL,2=POL,3=AMMO,4=OTHER SUPPLIES,5=16-TANKS BY TYPE,	
000017	11	C 17=28-PICTRY ARMOR BY TYPE,29=33-HELICOPTERS BY TYPE,	
000018	11	C 34-45=ANTI-TANKS/MORTARS BY TYPE	
000019	11	C INTRBCDE INTRBCD	
000020	11	COMMON/INREQ/INREQNTS16,31	8 K/V 4-B3
000021	11	COMMON/INREQ / INREQNTS16,31	

..... NLSNDJ
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DATE 090880

PAGE

1

000023 COMMON/INPTP/MTNKS(12),HLARM(12),HELOS(12),NANTNK(12)
000024 COMMON/SE06 / PCTLOC(12),US08(12),9,12)
000025 IF C NEXT 4 LINES ADDED FOR EQUIP INTERCHANGEABILITY NOV 79
000026 COMMON/TC05B/TC05(12),IMP06(12),15)
000027 IF C OVER CONTAINS THE UNAUTHORIZED EQUIP ON HAND IN THE UNIT
000028
000029 DIMENSION OVER(4)
000030 IF C E=250 MAX NUMBER IN 20 BIT FIELD 0K/V 7=80
000031 DATA 10THAI/149575/ 0K/V 7=80
000032 IF C
000033 IF C
000034 IF C
000035 IF C
000036 IF C
000037 IF C OVER(1)=0.
000038 IF C PERSONNEL
000039 IF C
000040 IF C
000041 IF C
000042 IF C
000043 IF C
000044 IF C
000045 IF C
000046 IF C
000047 IF C
000048 IF C
000049 IF C
000050 IF C
000051 IF C
000052 IF C
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000063 IF C
000064 IF C
000065 IF C
000066 IF C
000067 IF C
000068 IF C
000069 IF C
000070 IF C
000071 IF C
000072 IF C
000073 IF C
000074 IF C
000075 IF C
000076 IF C
000077 IF C
000078 IF C

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END ELY.

~~SECRET~~

BELT-L R04TRIT-DATA-11		UNITS: 24 12.7	
000001	P	PROBABILITY OF KILL GIVEN A SHOT, DIRECT FIRE ONLY	
000002	A	ATTRITION	
000003	KL	NUMBER OF TARGETS KILLED BY WEAPON J	
000004	J	NUMBER OF ROUNDS FIRED BY J AT K	
000005	AT	ATTRITION	
000006	OF	WEAPON/VEHICLE ATTRITION	
000007	J	OF ROUNDS FIRED PER WEAPON TYPE	
000008	OF	OF ROUNDS FIRED PER WEAPON	
000009	Q	BLANKS	
000010	BL	BLANKS	
000011	Q	1.0000	1.0000
000012	J	1.0000	1.0000

0177-0477


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000123 00 PEOPLE(110,21)0000
000124 00 PEOPLE(110,21)0000
000125 00 PEOPLE(110,21)0000
000126 00 DO 817 100000
000127 00 IF (ASSN(1,11)LE=0.0) GO TO 817
000128 00 SUMAT=PEOPLE(11,105)QUANT
000129 00 PEOPLE(11,105)=PEOPLE(11,105)QUANT
000130 00 PEOPLE(11,105)=PEOPLE(11,105)QUANT
000131 00 816 CONTINUE
000132 00 817 CONTINUE
000133 00 DO 818 100000
000134 00 DATA(110,21)0000
000135 00 DATA(110,21)0000
000136 00 818 CONTINUE
000137 00 CALL NTRAN (102,1,44,000000,100000, 0 K/V 4-80
000138 00 1,44,000000,100000, 0 K/V 4-80
000139 00 1,44,000000,100000, 0 K/V 4-80
000140 00 1,44,000000,100000, 0 K/V 4-80
000141 00 C CALL CHECK(100000,2)
000142 00 C WRITE(11,100000,100000,100000,100000,100000)
000143 00 C WRITE(11,100000,100000,100000,100000,100000)
000144 00 C CALL NTRAN (102,1,44,000000,100000, 0 K/V 4-80
000145 00 1,44,000000,100000, 0 K/V 4-80
000146 00 1,44,000000,100000, 0 K/V 4-80
000147 00 22)
000148 00 C
000149 00 DO 8993 INK=1,5
000150 00 ALLOCATE(INK,11)000000,100000,100000,100000,100000
000151 00 ALLOCATE(INK,21)000000,100000,100000,100000,100000
000152 00 ALLOCATE(INK,31)000000,100000,100000,100000,100000
000153 00 8993 CONTINUE
000154 00 C
000155 00 DO 7993 INK=5,53
000156 00 ALLOCATE(INK,11)000000,100000,100000,100000,100000
000157 00 7993 CONTINUE
000158 00 C
000159 00 C
000160 00 C
000161 00 C
000162 00 C
000163 00 C
000164 00 C
000165 00 C
000166 00 C
000167 00 994 DO 10 100000
000168 00 DATA(110,21)000000,100000,100000,100000,100000
000169 00 10 CONTINUE
000170 00 C
000171 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000172 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000173 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000174 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000175 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000176 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000177 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80
000178 00 IF (IDCMA(1,1)GO TO 172 0 JULY 80

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000000 00 C COMPUTE UNIT'S REQUIREMENTS
000100 00 C NEXT LINE JULY 80 TO INCLUDE ARMY ARMO RQMTS
000200 00 C EMERG ARMY BN IS IN A DECKARTED MED DIVISION...
000300 00 IF (ISUPPLY=0) GO TO 160
000400 00 CALL UPSTELTBY(2)
000500 00 CALL CROHNTIIOV(2,2)
000600 00 150 CONTINUE
000700 00 C MOVE UP ASSIMULATION STACK FOR NEXT DIVISION CYCLE
000800 00 172 00 15 151 V
000900 00 PEOPLE(1,2)=PEOPLE(1,1,2)
001000 00 15 CONTINUE
001100 00 PEOPLE(10,2)=0
001200 00 17 151 V
001300 00 IF (ASSIM(1,2).LE.0.0) GO TO 17
001400 00 QUANT=AVAIL(1,2)/ASSIM(1,2)
001500 00 PEOPLE(1,2)=PEOPLE(1,1,2)*QUANT
001600 00 17 CONTINUE
001700 00 DAVAIL(1,2)=DAVAIL(1,1,2)+PEOPLE(1,1,2)
001800 00 CALL MYRAN 17021,46,RQMTST(17,2),TRSTN, 0 K/V 4-80
001900 00 1,45,DAVAIL(1,2),TRSTN(22)
002000 00 CALL MYRAN 17113,13,DAVAIL(1,2),TRSTN,
002100 00 1,19,17,ART(1,2),TRSTN,
002200 00 1,17,RQMTST(17,2),TRSTN, 0 K/V 4-80
002300 00 22)
002400 00 00 VVJ INK(1,2)
002500 00 ALLOC(INK)=DAVAIL(INK,2)
002600 00 905 CONTINUE
002700 00 7887 151 V
002800 00 7887 151 V
002900 00 151 V
003000 00 151 V
003100 00 151 V
003200 00 151 V
003300 00 151 V
003400 00 151 V
003500 00 151 V
003600 00 151 V
003700 00 151 V
003800 00 151 V
003900 00 151 V
004000 00 151 V
004100 00 151 V
004200 00 151 V
004300 00 151 V
004400 00 151 V
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004700 00 151 V
004800 00 151 V
004900 00 151 V
005000 00 151 V
005100 00 151 V
005200 00 151 V
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005500 00 151 V
005600 00 151 V
005700 00 151 V
005800 00 151 V
005900 00 151 V
006000 00 151 V
006100 00 151 V
006200 00 151 V
006300 00 151 V
006400 00 151 V
006500 00 151 V
006600 00 151 V
006700 00 151 V
006800 00 151 V
006900 00 151 V
007000 00 151 V
007100 00 151 V
007200 00 151 V
007300 00 151 V
007400 00 151 V
007500 00 151 V
007600 00 151 V
007700 00 151 V
007800 00 151 V
007900 00 151 V
008000 00 151 V
008100 00 151 V
008200 00 151 V
008300 00 151 V
008400 00 151 V
008500 00 151 V
008600 00 151 V
008700 00 151 V
008800 00 151 V
008900 00 151 V
009000 00 151 V
009100 00 151 V
009200 00 151 V
009300 00 151 V
009400 00 151 V
009500 00 151 V
009600 00 151 V
009700 00 151 V
009800 00 151 V
009900 00 151 V
010000 00 151 V

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000293 00 C 1234 CONTINUE
000294 00 C NEXT LINE ADDED FOR DEACTIVATED DEC DIV, FEB 78
000295 00 C IF (IDEXACT EQ. 1) GO TO 2224
000296 00 C PROCESS OS ARTY BMS FOR RESUPPLY
000297 00 C IND=05ABNR
000298 00 C IF (IND=GT.0) CALL GIVANT(IND,IS)
000299 00 C
000300 00 C IF (IS=EQ.2) GO TO 2224
000301 00 C IF (STATUS=1) GO TO 2224
000302 00 C UNPACK STATUS FILE
000303 00 C 2220 CALL UPSTFLY(151)
000304 00 C
000305 00 C OBTAIN ONHAND QTY FOR WEAPONS FOR WARP DATA
000306 00 C IF WARP SWITCH IS SET AND BLUE SLOC
000307 00 C
000308 00 C IF USER REQUEST PARTITION ONLY, CHECK (US(10V))
000309 00 C
000310 00 C IF (IARF=LE.0) GO TO 2228
000311 00 C IF (IS=NE.1) GO TO 2228
000312 00 C IF (IS=US.1)
000313 00 C IF (IARF=NE.1) GO TO 2228
000314 00 C CALL ABARF(1)
000315 00 C CONTINUE
000316 00 C
000317 00 C COMPUTE UNITS REQUIREMENTS
000318 00 C IF (IS=EQ.2 AND OCMAT=GT.0) GO TO 900
000319 00 C BLUE UNIT ON NO DEACTED RED DIVISION
000320 00 C
000321 00 C 910 CALL CMMNT(15,1)
000322 00 C
000323 00 C GO TO 921
000324 00 C
000325 00 C
000326 00 C
000327 00 C
000328 00 C
000329 00 C
000330 00 C
000331 00 C
000332 00 C
000333 00 C
000334 00 C
000335 00 C
000336 00 C
000337 00 C
000338 00 C
000339 00 C
000340 00 C
000341 00 C
000342 00 C
000343 00 C
000344 00 C
000345 00 C
000346 00 C
000347 00 C
000348 00 C
000349 00 C

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000350 PCCTIM=PCCTOCT-37157
000351 IF(J=EQ.3) PCCTIM=PCCTOCT-151
000352 PAVATECT=720
000353 C COMPUTE UNIT REQUIREMENTS
000354 DRUMS=REQUIRECT
000355 IF(J=EQ.3) URQNTS=URQNTS+REQUIRECT B K/V 4-00
000356 IF(J=EQ.3) WRITE(6,7111) TRQTS,RQNTX(J),IFLAG,PCCTIM,
000357 C URQNTS
000358 C URQNTS
000359 CAPIOY FORMAT IN '000000 10V151REQUIRECT 2 91URQNTS'
000360 C /IN 1215,312,91
000361 IF(J=EQ.3) GO TO 423
000362 C COMPUTE THEATER REQUIREMENTS
000363 TRQTS=RQNTX(J)+PCCTOCTPCCTIM B K/V 4-00
000364 C ADD TUBE TYPE 2 AMMO
000365 IF(J=EQ.3) TRQTS=TRQTS+RQNTX(J),IFLAG,PCCTIM
000366 C IF(J=EQ.3) WRITE(6,7111) TRQTS,RQNTX(J),IFLAG,PCCTIM,
000367 C URQNTS
000368 C URQNTS
000369 C URQNTS
000370 PAVAIL(J)=AMIN(URQNTS,ALLOCT(J),IFLAG,PAVAIL(J))
000371 C DECREMENT RESOURCES AVAILABLE
000372 IF(DAVAIL(J),IFLAG,LE,PAVAIL(J)) PAVAIL(J)=DAVAIL(J),IFLAG
000373 IF(PAVAIL(J),IFLAG,GT) PAVAIL(J)=0
000374 DAVAIL(J),IFLAG=DAVAIL(J),IFLAG,PAVAIL(J)
000375 DAVAIL(J)=DAVAIL(J)-PAVAIL(J)
000376 AGAINST(J)=AGAINST(J)+PAVAIL(J)
000377 C PROVIDE PARTITION GRINS FOR POST PROCESSOR
000378 AGAINST(J),IFLAG=AGAINST(J),IFLAG,PAVAIL(J)
000379 GO TO 50
000380 C
000381 C
000382 RED SIDE OR EQUIP TYPE RESUPPLY
000383 RED SIDE (NO PARTITIONS AS OF MAR 76)
000384 423 IF(SUPPLY=NEE B TRQTS) J=EQ. 17 GO TO 50
000385 TRQTS=RQNTX(J),IFLAG,PCCTIM B K/V 4-00
000386 C IF AMMO ADD IN TUBE TYPE 2
000387 IF(J=EQ.3) TRQTS=TRQTS+RQNTX(J),IFLAG,PCCTIM B K/V 4-00
000388 IF(TRQTS,LE,GT) GO TO 50
000389 PAVAIL(J)=URQNTS/TRQTS B K/V 4-00
000390 PAVAIL(J)=MIN(URQNTS,ALLOCT(J),IFLAG,PAVAIL(J)) B K/V 4-00
000391 IF(J=EQ.3) WRITE(6,7111) TRQTS,URQNTS,PAVAIL(J),ALLOCT(J)
000392 CAPIOY FORMAT IN 'TRQTSURQNTS+PAVAIL(J)+ALLOCT(J)+TRQTS'
000393 IF(DAVAIL(J),IFLAG,LE,PAVAIL(J)) PAVAIL(J)=DAVAIL(J),IFLAG
000394 IF(PAVAIL(J),IFLAG,GT) PAVAIL(J)=0
000395 DAVAIL(J)=DAVAIL(J)-PAVAIL(J)
000396 AGAINST(J)=AGAINST(J)+PAVAIL(J)
000397 C DECREMENT RESOURCES AVAILABLE
000398 DAVAIL(J)=DAVAIL(J)-PAVAIL(J)
000399 AGAINST(J)=AGAINST(J)+PAVAIL(J)
000400 C
000401 C
000402 C15 SWITCH ON TO RESUPPLY ONLY DECIMATED RED DIVS
000403 IF (15,EQ.2,AND(SUPPLY,NEE) GO TO 27
000404 C PERSONNEL
000405 STAFF(17,15)=STAFF(17,15)+PAVAIL(J)
000406 STAFF(17,15)=STAFF(17,15)+PAVAIL(J)
000407 C
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00007	0	C	AMMO	
00008	0	C	RESUPPLY AMMO FOR TUBE TYPE 1	
00009	0	C	TRAMATI(REQUR(13),REQUR(14),14,3) * TOTAL UNIT AMMO REQUIREMENT	
00010	0	C	STAFIL(13,15)=STAFIL(13,15)+(REQUR(13)+TRQ1)	
00011	0	C	* PAVAIL(13)	
00012	0	C	RESUPPLY AMMO FOR TUBE TYPE 2	
00013	0	C	STAFIL(13,15)=STAFIL(13,15)+(REQUR(14)+TRQ1)	
00014	0	C	* PAVAIL(13)	
00015	0	C	TRQ1(16,18)=TRQ1(16,18)+(REQUR(14)+PAVAIL(13))	
00016	0	C	* STAFIL(13,15)=STAFIL(13,15)+STAFIL(13,15)	
00017	0	C	FORMAT(14,18)=TRQ1(16,18)+PAVAIL(13)+STAFIL(13,15)	
00018	0	C	* STAFIL(13,15)=STAFIL(13,15)+STAFIL(13,15)	
00019	0	C	OTHER SUPPLIES	
00020	0	C	STAFIL(13,15)=STAFIL(13,15)+PAVAIL(14)	
00021	0	C	IF(15,15)=0:OR(SUPPLY,REQUR) GO TO 145	
00022	0	C	DO 145 K=2,4	
00023	0	C	GAINSTERT = GAINSTERT + PAVAIL(14)	
00024	0	C	CONTINUE	
00025	0	C	CONTINUE	
00026	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00027	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00028	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00029	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00030	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00031	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00032	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00033	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00034	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00035	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00036	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00037	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00038	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00039	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00040	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00041	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00042	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00043	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00044	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00045	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00046	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00047	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00048	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00049	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00050	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00051	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00052	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00053	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00054	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00055	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00056	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00057	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00058	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00059	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00060	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00061	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00062	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	
00063	0	C	IF 115,15=2:AND(15,15)=2:GO TO 147	

[illegible]

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000521 00 1110 CONTINUE
000522 00 C ----- WEAPON BY TYPE
000523 00 00 70 K115
000524 00 12K+0115-11
000525 00 TRK+1102458
000526 00 INDEX=1K-0112+4
000527 00 IF TRK=01 INDEX=33
000528 00 IF (K.EQ.4) INDEX=114
000529 00 J20
000530 00 00 45 JK=1,23,2
000531 00 J201
000532 00 IF (K.EQ.3 AND J.GT.5) GO TO 72
000533 00 IF (K.EQ.1) INDEX=J1,5,7 GO TO 65
000534 00 C ----- GIVE NEW/REPAIRED WEAPONS TO UNIT
000535 00 C ----- DECREMENT PERSONNEL FOR CREWS TO NEW/REPAIRED WEAPONS
000536 00 C ----- DO NOT WITHDRAW CREWS FOR ANTITANK AND MORTARS
000537 00 12K+0115-11
000538 00 CRMS12=MPH0U(1,J,12)
000539 00 IF (K.EQ.1) GO TO 42
000540 00 12+0115-11+K
000541 00 STAP12(12)=STAP12(12)+PAVALINDEX+J1+CRMS12
000542 00 42 STAP12(12)=STAP12(12)+STAP12(12)+PAVALINDEX+J1
000543 00 65 CONTINUE
000544 00 70 CONTINUE
000545 00 C COMPUTE STATE NOMINATOR DENOMINATOR COMPUTED IN PREPROCESSOR1
000546 00 197 CALL STATION(0,1,15,9,0) @ K/V 4-00
000547 00 1715=0.00 1160 TO 151
000548 00 QUAR=0.0
000549 00 J20
000550 00 C NEXT 4 LINES CORRECTED (J/JK, 11/91, FEB 70
000551 00 00 153 JK=1,2
000552 00 J=J+1
000553 00 DIRECT(J,0)=STAP12(12)+JK,2)
000554 00 QUAR=QUAR+STAP12(12)+JK,2)
000555 00 150 CONTINUE
000556 00 IF (QUAR > 0.0160 TO 140
000557 00 00 144 J=1,2
000558 00 MP1(J,4,10)=UNAT(J,4,21)/QUAR
000559 00 149 CONTINUE
000560 00 140 CONTINUE
000561 00 151 CALL PRSTFL (10,7,15)
000562 00 C ----- COMPUTE UNITS STATE
000563 00 ANUN=0.
000564 00 00 3 K115
000565 00 00 2 KJ113
000566 00 ANUN=ANUN+UNAT(KJ,15)
000567 00 2 CONTINUE
000568 00 3 CONTINUE
000569 00 STATE=ANUN/STATION(15,10)+J
000570 00 STATE=STATE+J
000571 00 CS WRITE(6,71) IDV,15,STATE
000572 00 71 FORMAT (1X,15,STATE,1,215,172,4)
000573 00 IF (K.EQ.15) EQ. 0 AND STATE =GT. 100,1STATE=100.
000574 00 IF (STATE.GT.127.0) STATE=127.0
000575 00 IF (STATE.LT.1.0) STATE=1.0
000576 00 IF (15.EQ.1) (STATE)=STATE
000577 00

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AD-A130 065

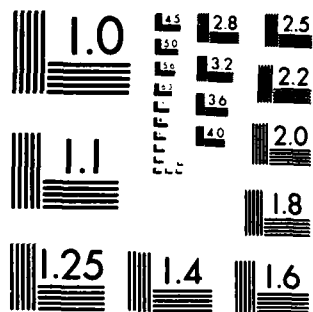
CONCEPTS EVALUATION MODEL (CEM) ATTRITION AND
CALIBRATION MODIFICATION I..(U) GENERAL RESEARCH CORP
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GRC-1162-01-80-CR MDA903-80-C-0321 F/G 14/2

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

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TRNTH=RNTHSTINDEX+J+1+PCTCLOC(1) 0 K/V 4-80
AA=REQUIRE(INDEX+J+1)/TRQTS 0 K/V 4-80
PCTCLOC(1)=INDEX+J
C ARG IS SET TO UNIT'S RGNHT FOR WPN TYPE INDEX+J-4
RNTHINDEX+J+1=RNTHINDEX+J+1+PCTCLOC(1) 0 K/V 4-80
REQUIRE(INDEX+J+1)=RNTHINDEX+J+1+PCTCLOC(1) 0 K/V 4-80
TOTPER=TOTPER+PCTCLOC(1)+RNTHINDEX+J+1+PCTCLOC(1) 0 K/V 4-80
C 371 IF(R.EQ.9) OLDATH=OLDATH+STAFILIM+JK+151+PCTCLOC(1)+J+1
000162 00 1095 CONTINUE
000163 01 1050 CONTINUE
000164 00 C
000165 00 C TOTPER IS THE TOTAL CREW REQ FOR NEW WPNs
000166 00 C UCRTM IS THE TOTAL CREW ALLOC TO EXISTING AT/M
000167 01 C 1'OLDATH' PERS MUST BE KEPT IN RESERVE FOR AT/M ON HAND
000168 00 C
000169 01 C PCTCLOC(1)
000170 01 IF(TOTPER-1) GO TO 55
000171 00 DEM-STAFILIM+151-OLDATH
000172 00 PCTCLOC(1)=TOTPER
000173 01 IF(PCTCLOC(1)+1) PCTCLOC(1)
000174 00 IF(PCTCLOC(1)+1) PCTCLOC(1)
000175 01 C
000176 00 C
000177 00 55 DO 1150 J=5,45
000178 00 PAVAIL(J)=0
000179 01 IF (REQUIRE(J)+1) LE(0,0) GO TO 1151 0 K/V 4-80
000180 00 PAVAIL(J)=REQUIRE(J)+1+PCTCLOC(1) 0 K/V 4-80
000181 00 C DECREMENT RESOURCES AVAILABLE
000182 01 IF(PAVAIL(J)+1) LE(0,0) PAVAIL(J)=0
000183 00 IF(PAVAIL(J)+1) LE(0,0) PAVAIL(J)=0
000184 00 DATACT(J)=DATACT(J)+PAVAIL(J)
000185 01 XGAINS(J)=1+GAINS(J)+PAVAIL(J)
000186 00 C COMPUTE UNSATISFIED RGNHTS FOR WEAPON TYPE J-4
000187 00 1151 XRO(J)=XRO(J)+PAVAIL(J)
000188 00 IF(PCTCLOC(1)+1) LE(0,0) PCTCLOC(1)
000189 00 C AVBL AT THIS TIME IS THE UNSATISFIED RGNHTS FOR WPN J-4
000190 00 PCTCLOC(1)=XRO(J)+1
000191 00 1150 CONTINUE
000192 00 C
000193 00 C
000194 00 C FOLLOWING ADDED TO DETERMINE IF WPN TYPES CAN BE USED AS
000195 00 C REPLACEMENTS FOR AUTHORIZED SHORTAGES. STATEMENT 1110 IS
000196 00 C CRST ADDED FOR THIS PURPOSE.
000197 00 C
000198 00 C
000199 01 C IS INTERCHANGEABILITY BEING PLAYED FOR BLUE? IF NOT SKIP THIS
000200 00 C PORTIONS
000201 01 IF(1+CHG(1)) .EQ. 0 GO TO 1110
000202 00 DO 1112 JK=1,3
000203 01 C
000204 01 C LOOK AT ALL WEAPON TYPES.
000205 00 DO 1109 I=1,5,45
000206 01 C KL IS THE WPN CATEGORY
000207 00 KL=(I+KL-5)/12+1
000208 01 IF(1+CHG(1)) .EQ. 0
000209 00 C SEE WHAT TYPES CAN BE USED FOR WEAPON I+KL
000210 01 IF(1+CHG(1)) .EQ. 0 GO TO 1109

***** DDSEP *****

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000265      IF 115.00.30 IN=70
000266      IN 8 IN=1
000267      SHIP(LIN)=0
000268      DO 300 JN=1,4
000269      DO 310 JN=1,4
000270      FPEACH=UNATRI(NI,JN,15)/QUAN
000271      IF FPEACH<.5 THEN RETURN 0
000272      IF FPEACH<.5 THEN FPEACH=.5
000273      HELIP(LIN)=JN,INT(FPEACH)
000274      SHIP(LIN)=SHIP(LIN)+HELIP(LIN,JN,15)
000275      DO 310 CONTINUE
000276      DO 300 CONTINUE
000277      CS  WRITE(6,17) 1,15,IN,SHIP(LIN)
000278      CS  FORMAT (1M,'DDSEP BLUE AVG MELO IFP',315,F12.4)
000279      CALL PRSTFCT(15)
000280      DO 310 CONTINUE
000281      DO 300 CONTINUE
000282      CS  WRITE(6,17) 1,15,IN,SHIP(LIN)
000283      CS  FORMAT (1M,'DDSEP BLUE AVG MELO IFP',315,F12.4)
000284      CALL PRSTFCT(15)
000285      DO 310 CONTINUE
000286      DO 300 CONTINUE
000287      RETURN
000288      END
END ELY.

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***** DECSUP *****

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000099 01 C STAFFIL(1,2)=STAFFIL(2,2)+PEOP
000100 01 C GAINS(1)=GAINS(1)+PEOP
000101 01 C
000102 01 C
000103 01 C DAVAIL(1,2)=DAVAIL(1,2)+PEOP
000104 01 C WEAPON ALLOCATION BY TYPE
000105 01 C
000106 01 C DO 70 K=1,4
000107 01 C INCR=124958
000108 01 C INCR=(K-1)*1249
000109 01 C IF (K=1) INCR=23
000110 01 C IF (K=4) IN =116
000111 01 C
000112 01 C DO 45 JK=1,23,2
000113 01 C
000114 01 C IF (STAFFIL(JK,2)=LE(JK,2)) GO TO 45
000115 01 C IF (K=1) GO TO 70
000116 01 C IF (K=4) GO TO 70
000117 01 C IF (K=2) GO TO 70
000118 01 C IF (K=3) GO TO 70
000119 01 C IF (K=4) GO TO 70
000120 01 C IF (K=1) GO TO 70
000121 01 C IF (K=2) GO TO 70
000122 01 C IF (K=3) GO TO 70
000123 01 C IF (K=4) GO TO 70
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000127 01 C IF (K=4) GO TO 70
000128 01 C IF (K=1) GO TO 70
000129 01 C IF (K=2) GO TO 70
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000131 01 C IF (K=4) GO TO 70
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000139 01 C IF (K=4) GO TO 70
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000145 01 C IF (K=2) GO TO 70
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000151 01 C IF (K=4) GO TO 70
000152 01 C IF (K=1) GO TO 70
000153 01 C IF (K=2) GO TO 70
000154 01 C IF (K=3) GO TO 70
000155 01 C IF (K=4) GO TO 70

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***** DECSUP *****

***** DIVERP *****

000149	01	C	SUMPERKENTMENT = B.
000150	02	C	00 1040 L = 1.0
000151	03	C	00 1040 SUMPERKENTMENT = B.
000152	04	C	00 1050 L = 1.12
000153	05	C	00 1050 SUMPERKENTMENT = B.
000154	06	C	00 1060 L = 1.11
000155	07	C	00 1060 SUMPERKENTMENT = B.
000156	08	C	00 1070 L = 1.10
000157	09	C	00 1070 SUMPERKENTMENT = B.
000158	10	C	1000 CONTINUE
000159	11	C	-----EXIT
000160	12	C	RETURN
000161	13	C	END

END ELT.

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000000 BT C STATUS FILE*****
000001 01 C
000002 02 C
000003 03 C
000004 04 C
000005 05 C
000006 06 C
000007 07 C
000008 08 C
000009 09 C
000010 10 C
000011 11 C
000012 12 C
000013 13 C
000014 14 C
000015 15 C
000016 16 C
000017 17 C
000018 18 C
000019 19 C
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000092 92 C
000093 93 C
000094 94 C
000095 95 C
000096 96 C
000097 97 C
000098 98 C
000099 99 C
000100 100 C

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LINE	CODE	TEXT	DATE	TIME	STATUS	REMARKS
000001	00	COMPILE (INDEX)	1974	10.1		
000002	01	SUBROUTINE C1VART (INDEX, ISI)				
000003	02	C CALLED BY DDEMD				
000004	03	C INCLUDE PROC				
000005	04	C THIS SUBROUTINE RESUPPLIES ARTY BMS				
000006	05	C INDEX=INDEX OF ARTY BN STATUS FILE				
000007	06	C DIMENSION TUBE(13)				
000008	07	C COMMON/PCOGY/ PCLOC(10)=13,308(13,12)				
000009	08	C COMMON/CRADA/ PCOLX(15,3), PCOPLX(10,3), DAVA(15,3), AVAILX(15,3)				
000010	09	C COMMON/NGAINST/ NGAINST(15,2)				
000011	10	C COMMON/ARTY/ ARTY(15,1), ALLOC(15,1)				
000012	11	C COMMON/AVILX/ ALLOC(15,3)				
000013	12	C COMMON/TOC/ TOC(15,1)				
000014	13	C COMMON/PARTS/ CLOX(15,3), XGAIN(15,3)				
000015	14	C FOR ARTY BMS=308 PCOPLX(15,2) = 10,308				
000016	15	C COMMON/IRQMH/ IRQMH(15,2)				
000017	16	C COMMON/IRQMH/ IRQMH(15,1)				
000018	17	C COMMON/AVILX/ ALLOC(15,3)				
000019	18	C COMMON/TOC/ TOC(15,1)				
000020	19	C COMMON/PARTS/ CLOX(15,3), XGAIN(15,3)				
000021	20	C FOR ARTY BMS=308 PCOPLX(15,2) = 10,308				
000022	21	C COMMON/IRQMH/ IRQMH(15,2)				
000023	22	C COMMON/IRQMH/ IRQMH(15,1)				
000024	23	C COMMON/AVILX/ ALLOC(15,3)				
000025	24	C COMMON/TOC/ TOC(15,1)				
000026	25	C COMMON/PARTS/ CLOX(15,3), XGAIN(15,3)				
000027	26	C FOR ARTY BMS=308 PCOPLX(15,2) = 10,308				
000028	27	C COMMON/IRQMH/ IRQMH(15,2)				
000029	28	C COMMON/IRQMH/ IRQMH(15,1)				
000030	29	C COMMON/AVILX/ ALLOC(15,3)				
000031	30	C COMMON/TOC/ TOC(15,1)				
000032	31	C COMMON/PARTS/ CLOX(15,3), XGAIN(15,3)				
000033	32	C FOR ARTY BMS=308 PCOPLX(15,2) = 10,308				
000034	33	C COMMON/IRQMH/ IRQMH(15,2)				
000035	34	C COMMON/IRQMH/ IRQMH(15,1)				
000036	35	C COMMON/AVILX/ ALLOC(15,3)				
000037	36	C COMMON/TOC/ TOC(15,1)				
000038	37	C COMMON/PARTS/ CLOX(15,3), XGAIN(15,3)				
000039	38	C FOR ARTY BMS=308 PCOPLX(15,2) = 10,308				
000040	39	C COMMON/IRQMH/ IRQMH(15,2)				
000041	40	C COMMON/IRQMH/ IRQMH(15,1)				
000042	41	C COMMON/AVILX/ ALLOC(15,3)				
000043	42	C COMMON/TOC/ TOC(15,1)				

..... FOR/MAIN

DATE 49788D

PAGE

000000P ***** MAP/MAIN *****

BELT L COAST/INAP/MAIN
ELI007 STORIA 9/00/NO 001151 (13.1)

000001 09 NOT TPFs

000002 09 SEC MAIN

000003 09 IN ACROB

000004 09 IN ACROB

000005 09 IN ACROB

000006 09 IN ACROB

000007 09 IN ACROB

000008 09 IN ACROB

000009 09 IN ACROB

000010 09 IN ACROB

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000026 09 IN ACROB

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000029 09 IN ACROB

***** LOGREP *****

DATE 090800

PAGE

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000030	09	IN SHIPS
000031	09	IN SHIP
000032	09	IN STACNA
000033	09	IN STARMY
000034	09	IN STBDE
000035	09	IN STBDE
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000009	09	IN OUTIND
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000011	09	IN PRIS
000012	09	IN PTOP
000013	09	IN RTH
000014	09	IN MCRP
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000016	09	IN REA
000017	09	IN REALL
000018	09	IN REDCH
000019	09	IN RETFO
000020	09	IN RLSBF
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000022	09	IN ANFAT
000023	09	IN RPTSW
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000026	09	IN RYDATA
000027	09	IN SCALR
000028	09	IN SCRAT
000029	09	IN STATSW
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000033	09	IN TACOPY
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000038	09	IN TIRHNA
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000042	09	IN RETZEL
000043	09	IN WDSIE
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000045	09	IN A-IRDAT
000046	09	IN A-ALOC
000047	09	IN A-BTSPC
000048	09	IN A-CDSET
000049	09	IN A-CEMPT/LEW/CANAS
000050	09	IN A-CINDEX
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000174	00	IN X-UPEND
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1. *Journal of Management Studies*, 1997, 34, 1, 1-14.

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000025 01 C HIGHEL IS AVERAGE HELICOPTER JAS I/P USED BY MED IN ESTIMATION
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000027 01 C BLUE CORPS #71-110 HELIFF
000028 01 C COMMON/MAHUNT/MAHUNT/MAHUNT
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000299 00 40 L=1,N=ST
000300 SUM=0
000301 DO 40 K=1,NVT
000302 IF (L,LE,NB45,AND,K,LE,NB5),OR,(L,GT,NB45,AND,K,GT,NB5)) GO TO 40
000303 SUM=SUM+K*1/NVT
000304 40 CONTINUE
000305 PRINT
000306 VAL=1+SUM/VNRK(1)/UNSILL(1)
000307 49 CONTINUE
000308 50 CONTINUE
000309 IF (TEST=1) NEW=VOLD*1.1*EPT GO TO 61
000310 WRITE(6,101) VOLD,VNRK,EPT
000311 WRITE(6,330) (VAL(I),I=1,NMST)
000312 501 FORMAT(' PHASE 1 LOOP 1 DID NOT CONVERGE',J,14.8)
000313 STOP
000314 GO TO 60
000315 WRITE(6,331)
000316 339 FORMAT(' FINAL SOLUTION TO REASON TYPE INTRINSIC VALUE: ',
000317 1/10X,'VAL =',10F8.4)
000318 C
000319 C
000320 C *****
000321 C ZACKRANKING TARGETS:
000322 C ALL IN
000323 C 7 ATTENT
000324 C
000325 DO 550 L=1,NMST
000326 PSUM = 0
000327 DO 555 K = 1,NVT
000328 PSUM = PSUM + P(L,K)
000329 555 CONTINUE
000330 DO 510 K = 1,NVT
000331 IF (V(I,K),L=0) GO TO 514
000332 Q(K) = P(L,K) * V(I,K)
000333 GO TO 510
000334 510 Q(K) = 0
000335 IF (P(L,K),NE,0) Q(K) = (P(L,K)/PSUM)-1
000336 510 CONTINUE
000337 WRITE (4,525) L,(Q(K),K=1,NVT)
000338 525 FORMAT ('DIST = ',J3,' Q(K) = ',12F7.5,'/N 1/725K)
000339 C
000340 C (Q(K),K=1)
000341 DO 530 K = 1,NVT
000342 IF (Q(K),EQ,0) GO TO 53
000343 QTEST = Q(K)
000344 DO 525 KTEST = 1,NVT
000345 IF (QTEST,LE,K) GO TO 525
000346 IF (QTEST,GT,Q(KTEST)) Q(K) = (Q(K) + Q(K)) * Q(K)
000347 525 CONTINUE
000348 530 CONTINUE
000349 DO 540 K = 1,NVT
000350 ON 535 M = 1,NVT
000351 D(M,K) = Q
000352

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PHASEONE	DATE	PAGE
000304	10-10-1980	1
000317	IF (INL,EN,0) DIM(K) = 0	22
000318	535 CONTINUE	22
000319	540 CONTINUE	22
000320	DO 5357 MUMS(MVT)	22
000321	WRITE (4,535) (DIMUM,KUM),KUM=1,MVT)	22
000322	370 FORMAT (13F10.1,3F10.1)	22
000323	5357 CONTINUE	22
000324	DO 545 K = 1,MVT	22
000325	FDSUM = 0	22
000326	DO 545 M = 1,MVT	22
000327	FDSUM = FDSUM + (DIM,K) * (FIL,M)	22
000328	545 CONTINUE	22
000329	I = IND(L,1)	22
000330	DIVSUM = (VIBR(I) * QBS(L) * RATE(L) * REPL) * FDSUM	22
000331	IF (DIVSUM,0) GO TO 545	22
000332	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000333	370 FORMAT (13F10.1,3F10.1)	22
000334	545 CONTINUE	22
000335	550 CONTINUE	22
000336	IF (INL,EN,0) GO TO 545	22
000337	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000338	370 FORMAT (13F10.1,3F10.1)	22
000339	545 CONTINUE	22
000340	550 CONTINUE	22
000341	IF (INL,EN,0) GO TO 545	22
000342	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000343	370 FORMAT (13F10.1,3F10.1)	22
000344	545 CONTINUE	22
000345	550 CONTINUE	22
000346	IF (INL,EN,0) GO TO 545	22
000347	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000348	370 FORMAT (13F10.1,3F10.1)	22
000349	545 CONTINUE	22
000350	550 CONTINUE	22
000351	IF (INL,EN,0) GO TO 545	22
000352	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000353	370 FORMAT (13F10.1,3F10.1)	22
000354	545 CONTINUE	22
000355	550 CONTINUE	22
000356	IF (INL,EN,0) GO TO 545	22
000357	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000358	370 FORMAT (13F10.1,3F10.1)	22
000359	545 CONTINUE	22
000360	550 CONTINUE	22
000361	IF (INL,EN,0) GO TO 545	22
000362	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000363	370 FORMAT (13F10.1,3F10.1)	22
000364	545 CONTINUE	22
000365	550 CONTINUE	22
000366	IF (INL,EN,0) GO TO 545	22
000367	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000368	370 FORMAT (13F10.1,3F10.1)	22
000369	545 CONTINUE	22
000370	550 CONTINUE	22
000371	IF (INL,EN,0) GO TO 545	22
000372	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000373	370 FORMAT (13F10.1,3F10.1)	22
000374	545 CONTINUE	22
000375	550 CONTINUE	22
000376	IF (INL,EN,0) GO TO 545	22
000377	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000378	370 FORMAT (13F10.1,3F10.1)	22
000379	545 CONTINUE	22
000380	550 CONTINUE	22
000381	IF (INL,EN,0) GO TO 545	22
000382	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000383	370 FORMAT (13F10.1,3F10.1)	22
000384	545 CONTINUE	22
000385	550 CONTINUE	22
000386	IF (INL,EN,0) GO TO 545	22
000387	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000388	370 FORMAT (13F10.1,3F10.1)	22
000389	545 CONTINUE	22
000390	550 CONTINUE	22
000391	IF (INL,EN,0) GO TO 545	22
000392	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000393	370 FORMAT (13F10.1,3F10.1)	22
000394	545 CONTINUE	22
000395	550 CONTINUE	22
000396	IF (INL,EN,0) GO TO 545	22
000397	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000398	370 FORMAT (13F10.1,3F10.1)	22
000399	545 CONTINUE	22
000400	550 CONTINUE	22
000401	IF (INL,EN,0) GO TO 545	22
000402	WRITE (4,535) (DIVSUM,KUM),KUM=1,MVT)	22
000403	370 FORMAT (13F10.1,3F10.1)	22
000404	545 CONTINUE	22

***** PHASE2 *****

DELTA ABATIT, PHASE2

ELT037 57551A 19/08/88 06:12:15 (187)

***** COMPILER (H=1)

***** SUBROUTINE PHASE2IRGACH1, IATKR, IOUTT

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DATE 090800

PAGE

8

***** PHASE-1IP *****


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000134 C IMP IMPORTANCE TO 1
000135 IMIKI=I
000136 IN CONTINUE
000137 2 10
000138 2 C A-PRIME(L,K) IS SET TO THE AVERAGE FRACTION OF TIME A PARTICULAR
000139 TARGET IS AVAILABLE TO C
000140 2 C
000141 DO 25 K=1,NMST
000142 DO 15 A=1,NMST
000143 APIC(K)=ALIKT
000144 15 CONTINUE
000145 2 20 CONTINUE
000146 2 C
000147 ADD UP SUM OF PK FOR EACH WEAPON
000148 2 C
000149 DO 30 L=1,NMST
000150 PRSUM(L)=0.
000151 DO 25 K=1,NMST
000152 PRSUM(L)=PRSUM(L)+P(L,K)
000153 25 CONTINUE
000154 30 CONTINUE
000155 2 C
000156 2 C
000157 DO 32 L=1,N
000158 DO 100 I=1,NMST
000159 SIM=0.
000160 2 C
000161 SELECT A VEHICLE
000162 2 C
000163 DO 32 L=1,N
000164 DO 30 J=1,NMST
000165 2 C
000166 SELECT A WEAPON
000167 2 C
000168 C W L P
000169 IF (AM(I,J)=EQ+Q+Q+Q+Q+Q+Q+Q+Q+Q) GO TO 40
000170 DO 35 K=1,NMST
000171 IF (V(K)=LE+U+U) GO TO 33
000172 2 C
000173 SELECT A TARGET
000174 2 C
000175 BUILD TARGET PRIORITY MATRIX BASED ON PK AND TARGET IMPORTANCE
000176 2 C
000177 (ON-ON-PR+ONE FOR TARGETS WITH ZERO IMPORTANCE)
000178 2 C
000179 IF (IMIKI=EQ+EQ) GO TO 33
000180 QIKI=PIL(K)+IMIKI
000181 GO TO 35
000182 33 QIKI=L.
000183 IDENTIFY VEHICLES THAT CANNOT KILL THORNTLESS VEHICLES
000184 2 C
000185 IF (PIL(K)=E. )
000186 C GET W IPIC(K)/PRSUM(L)=1)
000187 2 35 CONTINUE
000188 2 C
000189 IF MATQ IS TURNED ON, THE Q AND D MATRICES WILL BE PRINTED
000190 2 C
000191 IF (MATQ=EQ+Q) GO TO 37
000192 2 CS WRITE (6,355) L,(Q(K,HUB),K,HUB+1,NMST)

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000247 02 C SHOOTER IJ WILL FIRE AT K WHEN HIGHER PRIORITY TARGETS ARE NOT
000248 02 C AVAILABLE LOWER PRIORITY TARGETS HAVE NO IMPACT
000249 02 C
000250 02 C
000251 02 C
000252 02 C
000253 02 C
000254 02 C
000255 02 C
000256 02 C
000257 02 C
000258 02 C
000259 02 C
000260 02 C
000261 02 C
000262 02 C
000263 02 C
000264 02 C
000265 02 C
000266 02 C
000267 02 C
000268 02 C
000269 02 C
000270 02 C
000271 02 C
000272 02 C
000273 02 C
000274 02 C
000275 02 C
000276 02 C
000277 02 C
000278 02 C
000279 02 C
000280 02 C
000281 02 C
000282 02 C
000283 02 C
000284 02 C
000285 02 C
000286 02 C
000287 02 C
000288 02 C
000289 02 C
000290 02 C
000291 02 C
000292 02 C
000293 02 C
000294 02 C
000295 02 C
000296 02 C
000297 02 C
000298 02 C
000299 02 C
000300 02 C
000301 02 C
000302 02 C
000303 02 C

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SHOOTER IJ WILL FIRE AT K WHEN HIGHER PRIORITY TARGETS ARE NOT AVAILABLE LOWER PRIORITY TARGETS HAVE NO IMPACT

PHASE2 *****

000247 02 C SHOOTER IJ WILL FIRE AT K WHEN HIGHER PRIORITY TARGETS ARE NOT AVAILABLE LOWER PRIORITY TARGETS HAVE NO IMPACT

000248 02 C

000249 02 C

000250 02 C

000251 02 C

000252 02 C

000253 02 C

000254 02 C

000255 02 C

000256 02 C

000257 02 C

000258 02 C

000259 02 C

000260 02 C

000261 02 C

000262 02 C

000263 02 C

000264 02 C

000265 02 C

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000294 02 C

000295 02 C

000296 02 C

000297 02 C

000298 02 C

000299 02 C

000300 02 C

000301 02 C

000302 02 C

000303 02 C

[illegible]

[illegible]

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000008 13 C MODENINDEX OF BDE ON DIV OR CORPS UNIT
000009 14 C ISIDES=BLUE 00E,2HEO DIV,3BLUE COMPS AIR CAV,4BLUE DIV AIR CAV
000010 15 C
000011 16 C
000012 17 C
000013 18 C
000014 19 C
000015 20 C
000016 21 C
000017 22 C
000018 23 C
000019 24 C
000020 25 C
000021 26 C
000022 27 C
000023 28 C
000024 29 C
000025 30 C
000026 31 C
000027 32 C
000028 33 C
000029 34 C
000030 35 C
000031 36 C
000032 37 C
000033 38 C
000034 39 C
000035 40 C
000036 41 C
000037 42 C
000038 43 C
000039 44 C
000040 45 C
000041 46 C
000042 47 C
000043 48 C
000044 49 C
000045 50 C
000046 51 C
000047 52 C
000048 53 C
000049 54 C
000050 55 C
000051 56 C
000052 57 C
000053 58 C
000054 59 C
000055 60 C
000056 61 C
000057 62 C
000058 63 C
000059 64 C
000060 65 C
000061 66 C

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DATE 4/18/81 PAGE 1

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***** POSTPROC *****
GROUP 1, K04TR11, POSTPROC
P012R1 R72-10 09/08/80 081123 (M) HI
PE0001 BUILDV PROC
COMMON/BUDEV7 BTSPLE1(10,5),TSPF1(1,3),TSPF2(1,3),
0002 SH0P1(2,3),TSPF3(1,3),TSPF4(1,3),
0003 ARTS1(1,3),TSPF5(1,3),TSPF6(1,3),TSPF7(1,3),
0004 MASCH1(1,3),TSPF8(1,3),TSPF9(1,3),TSPF10(1,3),
0005 TATEMP1(3,5),TSPF11(1,3),TSPF12(1,3),TSPF13(1,3),
0006 POS1(2,3),TSPF14(1,3),TSPF15(1,3),TSPF16(1,3),
0007 SUMPER1(1,3),TSPF17(1,3),TSPF18(1,3),TSPF19(1,3),
0008 SUMPER1(1,3),TSPF20(1,3),TSPF21(1,3),TSPF22(1,3),
0009 SUMPER1(1,3),TSPF23(1,3),TSPF24(1,3),TSPF25(1,3),
0010 SUMPER1(1,3),TSPF26(1,3),TSPF27(1,3),TSPF28(1,3),
0011 SUMPER1(1,3),TSPF29(1,3),TSPF30(1,3),TSPF31(1,3),
0012 SUMPER1(1,3),TSPF32(1,3),TSPF33(1,3),TSPF34(1,3),
0013 SUMPER1(1,3),TSPF35(1,3),TSPF36(1,3),TSPF37(1,3),
END
POP- NO FORTRAN PROCEDURE TABLE ENTRIES PRODUCED
PDP- 110 SYMBOLIC OUTPUT PRODUCED
END PDP ERRORS 1 NONE

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[illegible]

----- 6844d -----

[illegible]

EW 417.


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***** READAT *****
000115 03 C ... GHOST CREWS ...
000116 03 C ***** BEAR ON-LINE DIVISION DATA *****
000117 03 C
000118 03 C
000119 03 C
000120 03 C NEXT 2 LINES MODIFIED FOR MORE ARMY RESERVES, AUG 78
000121 03 C COMMON/TKRDSY/ DEFENSE, HARGIN, RPOOL, RPOOLC(16),
000122 03 C RPOOL(19,3,6), RPOOLC(16),
000123 03 C INTEGER RPOOLC, RPOOL, RPOOLC(16),
000124 03 C REAL HARGIN
000125 03 C
000126 03 C DEFENSE = DEFENSE SWITCH
000127 03 C HARGIN = IF AN ON-LINE DIV HAS WIN FRONTAGE > 1, AND ATK/DEF UNIT IS
000128 03 C GREATER THAN HARGIN, THIS DIV IS CONSIDERED A BEAR ON-LINE DIV
000129 03 C IF OTHER DIV WANT OF DIV PER ARMY WHICH CAN EXIST IN RPOOL (HARGIN)
000130 03 C HOLDTH = IF THE RATIO OF THE STRONGEST (IF A STATE) DIV IN THE RPOOL
000131 03 C AREA TO THE NEAREST ON-LINE DIV IS GREATER THAN HOLDTH, THE
000132 03 C RPOOL DIV WILL REPLACE THE ON-LINE DIV
000133 03 C
000134 03 C LISTPL(19,6)
000135 03 C LIST OF BEAR ON-LINE DIVS WHICH IN ARMY RESERVE CAN REPLACE
000136 03 C 1 = DIV INDEXES OF BEAR DIVS
000137 03 C 2 = PARENT ARMY HQ
000138 03 C LISTPL(16)
000139 03 C
000140 03 C COUNT, BY ARMY, OF BEAR ON-LINE DIVS IN LISTPL ARRAY
000141 03 C
000142 03 C RPOOL(19,3,6)
000143 03 C LIST OF REPLACEMENT DIVS
000144 03 C 1 = DIV INDEXES
000145 03 C 2 = INDEX OF BEAR ON-LINE DIV TO BE REPLACED (IF ONE EXISTS)
000146 03 C 3 = DELAY TIME TO IMPLEMENT REPLACEMENT PLAN (IN 12 HR DIV CYCLE)
000147 03 C 4 = PARENT ARMY HQ
000148 03 C
000149 03 C RPOOLC(16)
000150 03 C COUNT OF ARMY RESERVE DIVS
000151 03 C
000152 03 C
000153 03 C ***** READ OPTIONS AND LIMITS
000154 03 C
000155 03 C INPUT WEAPON COUNTS FROM PHASE 1 OF ATTRITION ALGORITHM
000156 03 C
000157 03 C READ (19) NBY, NBYOF, NBYV, NBYOFI, NBYDS, NBYMSI, NBYV, NBYOF,
000158 03 C NBYTNNST
000159 03 C
000160 03 C INPUT PK FOR K/V SCORE ATTRITION ALGORITHM
000161 03 C
000162 03 C READ(19) (LPL,K), K(1,26), L(1,52)
000163 03 C
000164 03 C INPUT AVAILABILITY OF WEAPONS AS SHOOTER/TARGET
000165 03 C
000166 03 C READ(19) (TAL,K), K(1,26), L(1,52)
000167 03 C
000168 03 C
000169 03 C READ (100) IZARTM, IAPT, ICPA, IDPC, LSUNRY, LTRCU,

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LINE	ADDRESS	DATA	DATE	PAGE
00170	GRNDPR01	SCAK APR 76	091880	1
00171	ATPR01			
00172	LUMTH13,11-1			
00173	LUMTH13,21-1			
00174	LUMTH13,21-1			
00175	LUMTH13,21-1			
00176	READ FEBA DATA			
00177	READ(TOT) TENDT,MINPEN,TERM			
00178	READ(TOT) TENDT,MINPEN,TERM			
00179	READ(TOT) TENDT,MINPEN,TERM			
00180	READ(TOT) TENDT,MINPEN,TERM			
00181	READ(TOT) TENDT,MINPEN,TERM			
00182	READ(TOT) TENDT,MINPEN,TERM			
00183	READ(TOT) TENDT,MINPEN,TERM			
00184	READ(TOT) TENDT,MINPEN,TERM			
00185	READ(TOT) TENDT,MINPEN,TERM			
00186	READ(TOT) TENDT,MINPEN,TERM			
00187	READ(TOT) TENDT,MINPEN,TERM			
00188	READ(TOT) TENDT,MINPEN,TERM			
00189	READ(TOT) TENDT,MINPEN,TERM			
00190	READ(TOT) TENDT,MINPEN,TERM			
00191	READ(TOT) TENDT,MINPEN,TERM			
00192	READ(TOT) TENDT,MINPEN,TERM			
00193	READ(TOT) TENDT,MINPEN,TERM			
00194	READ(TOT) TENDT,MINPEN,TERM			
00195	READ(TOT) TENDT,MINPEN,TERM			
00196	READ(TOT) TENDT,MINPEN,TERM			
00197	READ(TOT) TENDT,MINPEN,TERM			
00198	READ(TOT) TENDT,MINPEN,TERM			
00199	READ(TOT) TENDT,MINPEN,TERM			
00200	READ(TOT) TENDT,MINPEN,TERM			
00201	READ(TOT) TENDT,MINPEN,TERM			
00202	READ(TOT) TENDT,MINPEN,TERM			
00203	READ(TOT) TENDT,MINPEN,TERM			
00204	READ(TOT) TENDT,MINPEN,TERM			
00205	READ(TOT) TENDT,MINPEN,TERM			
00206	READ(TOT) TENDT,MINPEN,TERM			
00207	READ(TOT) TENDT,MINPEN,TERM			
00208	READ(TOT) TENDT,MINPEN,TERM			
00209	READ(TOT) TENDT,MINPEN,TERM			
00210	READ(TOT) TENDT,MINPEN,TERM			
00211	READ(TOT) TENDT,MINPEN,TERM			
00212	READ(TOT) TENDT,MINPEN,TERM			
00213	READ(TOT) TENDT,MINPEN,TERM			
00214	READ(TOT) TENDT,MINPEN,TERM			
00215	READ(TOT) TENDT,MINPEN,TERM			
00216	READ(TOT) TENDT,MINPEN,TERM			
00217	READ(TOT) TENDT,MINPEN,TERM			
00218	READ(TOT) TENDT,MINPEN,TERM			
00219	READ(TOT) TENDT,MINPEN,TERM			
00220	READ(TOT) TENDT,MINPEN,TERM			
00221	READ(TOT) TENDT,MINPEN,TERM			
00222	READ(TOT) TENDT,MINPEN,TERM			
00223	READ(TOT) TENDT,MINPEN,TERM			
00224	READ(TOT) TENDT,MINPEN,TERM			
00225	READ(TOT) TENDT,MINPEN,TERM			
00226	READ(TOT) TENDT,MINPEN,TERM			

000227	73	C	CONTINUE	0 K/V 4-B
000228	73	C	CONTINUE	0 K/V 4-B
000229	73	C	PERSONNEL-THRO-STORED LOADS ARE SET BY UNIT FOR EACH ENGAGEMENT	
000230	73	C	IN THE SUBROUTINE PHASE2....	
000231	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000232	73	C	JSUB(1,2,1,1)=MLARM(I,IAS)	
000233	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000234	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000235	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000236	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000237	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000238	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000239	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000240	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000241	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000242	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000243	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000244	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000245	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000246	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000247	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000248	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000249	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000250	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000251	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000252	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000253	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000254	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000255	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000256	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000257	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000258	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000259	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000260	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000261	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000262	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000263	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000264	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000265	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000266	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000267	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000268	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000269	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000270	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000271	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000272	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000273	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000274	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000275	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000276	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000277	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000278	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000279	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000280	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000281	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000282	73	C	JSUB(1,2,1,1)=MTRKSTIAS	
000283	73	C	JSUB(1,2,1,1)=MTRKSTIAS	

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The *Agrobacterium* strains were cultured in YEA medium for 24 h at 28 °C. The cell concentration of the strains was adjusted to 1.0 × 10⁸ cells/mL. The cell suspension was then diluted to 10⁶, 10⁷, 10⁸, 10⁹, 10¹⁰, 10¹¹, 10¹², 10¹³, 10¹⁴, and 10¹⁵ cells/mL. The cell suspension was then inoculated into the plant tissue. The transformation efficiency was determined by the number of transformants per 100 mg of plant tissue. The data were presented as the mean ± SD of three independent experiments.

000000 10 ***** RUNSEC *****

000100 10 ***** RUNSEC *****

000200 10 ***** RUNSEC *****

000300 10 ***** RUNSEC *****

000400 10 ***** RUNSEC *****

000500 10 ***** RUNSEC *****

000600 10 ***** RUNSEC *****

000700 10 ***** RUNSEC *****

000800 10 ***** RUNSEC *****

000900 10 ***** RUNSEC *****

001000 10 ***** RUNSEC *****

001100 10 ***** RUNSEC *****

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001600 10 ***** RUNSEC *****

001700 10 ***** RUNSEC *****

001800 10 ***** RUNSEC *****

001900 10 ***** RUNSEC *****

002000 10 ***** RUNSEC *****

002100 10 ***** RUNSEC *****

002200 10 ***** RUNSEC *****

002300 10 ***** RUNSEC *****

002400 10 ***** RUNSEC *****

002500 10 ***** RUNSEC *****

002600 10 ***** RUNSEC *****

002700 10 ***** RUNSEC *****

002800 10 ***** RUNSEC *****

002900 10 ***** RUNSEC *****

003000 10 ***** RUNSEC *****

003100 10 ***** RUNSEC *****

003200 10 ***** RUNSEC *****

003300 10 ***** RUNSEC *****

003400 10 ***** RUNSEC *****

003500 10 ***** RUNSEC *****

003600 10 ***** RUNSEC *****

003700 10 ***** RUNSEC *****

003800 10 ***** RUNSEC *****

003900 10 ***** RUNSEC *****

004000 10 ***** RUNSEC *****

004100 10 ***** RUNSEC *****

004200 10 ***** RUNSEC *****

004300 10 ***** RUNSEC *****

004400 10 ***** RUNSEC *****

004500 10 ***** RUNSEC *****

004600 10 ***** RUNSEC *****

004700 10 ***** RUNSEC *****

004800 10 ***** RUNSEC *****

004900 10 ***** RUNSEC *****

005000 10 ***** RUNSEC *****

005100 10 ***** RUNSEC *****

005200 10 ***** RUNSEC *****

005300 10 ***** RUNSEC *****

005400 10 ***** RUNSEC *****

005500 10 ***** RUNSEC *****

005600 10 ***** RUNSEC *****

005700 10 ***** RUNSEC *****

005800 10 ***** RUNSEC *****

005900 10 ***** RUNSEC *****

006000 10 ***** RUNSEC *****

006100 10 ***** RUNSEC *****

006200 10 ***** RUNSEC *****

006300 10 ***** RUNSEC *****

006400 10 ***** RUNSEC *****

006500 10 ***** RUNSEC *****

006600 10 ***** RUNSEC *****

006700 10 ***** RUNSEC *****

006800 10 ***** RUNSEC *****

006900 10 ***** RUNSEC *****

007000 10 ***** RUNSEC *****

007100 10 ***** RUNSEC *****

007200 10 ***** RUNSEC *****


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000114 14 C IF (INXAMP(1,1),ON,NOXGHT,0.07,00 TO 30 0 K/V 5-84)
000115 14 C
000116 14 C 00 TO 33
000117 14 C
000118 14 C CALLED FROM DDSEP OR NO AUTHORIZED PERSONNEL TGNOST OR NO CAUT
000119 14 C 29 VALP(1,1)SIDE(1,1)
000120 14 C TSMICR1
000121 14 C FTR0(1,0)
000122 14 C WEN
000123 14 C 00 TO 100 1-1,4
000124 14 C DO VV K=1,3
000125 14 C UNATK(1,1)SIDE(1,0,3)
000126 14 C CONTINUE
000127 14 C 1,00 CONTINUE
000128 14 C DOES THIS UNIT HAVE ANY FIRE POWER, IF NOT EXIT
000129 14 C IF A BLUE DIV OR CORPS W/O SUPPORT BDE EXIT
000130 14 C TEST AUTHORIZED PERSONNEL
000131 14 C IF (1STAF(1,1)SIDE(1,1)EQ(1,0)) RETURN
000132 14 C
000133 14 C ITET=INTKSL(1)
000134 14 C FORM MATRIX JX3
000135 14 C INDEX=50
000136 14 C PMSREQ = 0.
000137 14 C TYPE=4HTANK
000138 14 C THIS PORTION ADDED TO OPTIMIZE RUNTIME ***** MAY 1979
000139 14 C
000140 14 C 00 5-J K=1,3
000141 14 C KN = K - 1
000142 14 C IF (K=EQ,3) GO TO 150
000143 14 C TCAT = K
000144 14 C IF (K=EQ,1) GO TO 175
000145 14 C TYPE = 4HEARM
000146 14 C ITET = MLARM(1,1)
000147 14 C GO TO 175
000148 14 C 150 TCAT = 1
000149 14 C ITET = MAINTK(1,1)
000150 14 C INDEX = 110
000151 14 C 175 J = 0
000152 14 C
000153 14 C J=0
000154 14 C T244(1,1)=175TCAT
000155 14 C TAPN=30(1CAT-1)
000156 14 C DO 200 1-1,2312
000157 14 C J=J+1
000158 14 C TAPNTPRST
000159 14 C INITIALIZE UNIT WEAPON COUNTS
000160 14 C UNTPTTPRST,1SIDE(1,1)
000161 14 C IF (1TET,1,1) GO TO 5,1
000162 14 C WFOURSTAT(1,1)SIDE(1,1)
000163 14 C IF (1WFOURSTAT,1,1) GO TO 2,1
000164 14 C WFOURSTAT(1,1)SIDE(1,1)
000165 14 C WFOURSTAT(1,1)SIDE(1,1)
000166 14 C
000167 14 C
000168 14 C
000169 14 C
000170 14 C

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[illegible]

[illegible]

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AD-A130 065

CONCEPTS EVALUATION MODEL (CEM) ATTRITION AND
CALIBRATION MODIFICATION I..(U) GENERAL RESEARCH CORP
MCLEAN VA EASTERN TECHNOLOGIES DIV J E SHEPHERD OCT 80
GRC-1162-01-80-CR MDA903-80-C-0321

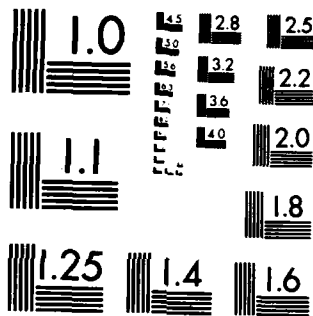
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



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000770 04 DIMENSION TACTIC
000771 04 C ZERO BLUE SIDE AVERAGE HELICOPTER FIREPOWER ARRAY
000772 04 DO 991 TACTIC
000773 04 DO 914 J=1,5
000774 04 DO 992 TACTIC
000775 04 MELIPIN(J)=0.
000776 04 CONTINUE
000777 04 991 CONTINUE
000778 04 914 CONTINUE
000779 04 992 CONTINUE
000780 04 C
000781 04 DO 101 I=1,915
000782 04 I=POOL(I)
000783 04 105 CONTINUE
000784 04 DO 105 I=1,71
000785 04 PLOGR(I)=0.
000786 04 PLOGR(I)=0.
000787 04 IF TACTIC(J) TACTIC(I)=0
000788 04 105 CONTINUE
000789 04 TPREP=0
000790 04 MENTP=MENTP(I)
000791 04 MENTP=MENTP(I)
000792 04 C-----READ SECTION CARD
000793 04 MODEL=
000794 04 CALL SECARD
000795 04 C
000796 04 DO 886 L=1,8
000797 04 DO 887 J=1,5
000798 04 K/V 5=0
000799 04 DO 888 J=1,6
000800 04 K/V 5=0
000801 04 886 CONTINUE
000802 04 887 CONTINUE
000803 04 C-----PROCESS BY SIDE
000804 04 HARDP=2000*HREFEE-1
000805 04 ASSIGN HARDP TO LABELA
000806 04 ASSIGN 5001 TO LABELB
000807 04 2000 ISIDE=ISIDE+1
000808 04 1500 ISIDE=ISIDE+1
000809 04 CALL CLROU
000810 04 MUMTC=0
000811 04 IF (ISIDE-61.2) 60 TO 9999
000812 04 MRECTP=
000813 04 MASGRT(1:ISIDE)=0
000814 04 MDTGRT(1:ISIDE)=0
000815 04 CALL SUPRNT (1:ISIDE)
000816 04 DO 1222 K=1,21
000817 04 STADIK(1:ISIDE)=0
000818 04 1222 CONTINUE
000819 04 C
000820 04 C-----NEED STARTING MISSION
000821 04 CALL READCR(MUMTC,61)
000822 04 C SAVE M, P, AND Q MODIFIERS BY SIDE
000823 04 POLH(1:ISIDE)=HREFEE(I)
000824 04 ARMORT(1:ISIDE)=HREFEE(I)
000825 04 OTHERM(1:ISIDE)=HREFEE(I)
000826 04 C P Q FOR INF FOR POL

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APPENDIX D

SAMPLE OUTPUT FROM A CEM
BATTLE ENGAGEMENT

